Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

VOL. 83 JULY 1955 NO. 7

- highly soluble in both acid and alkaline body fluids, especially at pH of renal tubules
- high plasma levels rapidly attained
- no alkalinization or forcing of fluids required
- single sulfonamide - not a mixture
- no danger of secondary fungus infections
- wide antibacterial range

you prescribe
these distinctive features
when you prescribe . . .

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GANTRISIN®—brand of sulfisoxazole (3,4 dimethyl-5 sulfanilamidoisoxazole)

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In using B-D MULTIFIT Syringes with B-D YALE Needles, you are assured all these important benefits:

superior performance — no leaking or jamming, uniformly smooth operation, minimum discomfort for your patients.

lower replacement costs — syringe parts are truly interchangeable; needles rust-resistant throughout for longer life.

reduced breakage — syringe barrel is stronger, more resistant to breakage.

longer life — unground, clear glass barrel virtually eliminates "wear-out" due to friction; needles hold a sharp point . . . are made to withstand rugged use.

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FIRST

IN HAY-FEVER RELIEF!

". . . results obtained with PHENERGAN in symptomatic relief of pollen hay fever were far superior to those obtained with any other antihistaminic agent."[1]

1. Silbert, N.E.: Ann. Allergy **10**:328 (May-June) 1952

Dosage: A single daily dose of 25 mg. at bedtime usually suffices.

Supplied: Tablets—12.5 mg. per tablet; bottles of 100. Syrup—6.25 mg. per teaspoonful (5 cc.); bottles of 1 pint.

TABLETS PHENERGAN® SYRUP

PROMETHAZINE HYDROCHLORIDE HYDROCHLORIDE

Wyeth

Philadelphia 2, Pa

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EPA

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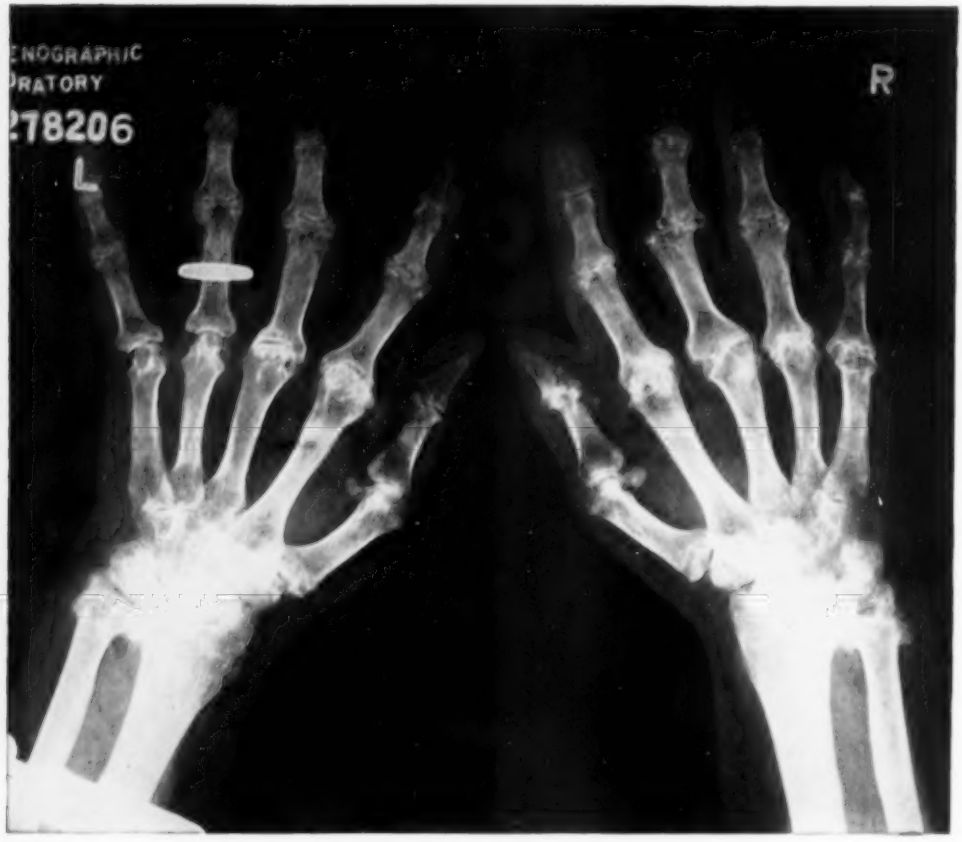

BUFFERIN®—*THE BETTER-TOLERATED SALICYLATE FOR RHEUMATOID ARTHRITIS*

Gastric upsets from aspirin are 3 to 9 times as frequent among arthritics as they are among the general population.[1] However, BUFFERIN is well tolerated by arthritics. At the Robert Breck Brigham Hospital of Boston 70 per cent of arthritics with a proved intolerance to aspirin could take BUFFERIN without gastric distress.[1]

Although patients often use sodium bicarbonate with aspirin to alleviate gastric symptoms, clinicians know that this causes a lowering of the salicylate level of the blood serum.[2] Moreover, this practice may cause retention of the sodium ion.[3] Pre-existing symptoms of cardiorenal disease have been aggravated.[4]

IN ARTHRITIS—WHEN LARGE AND PROLONGED SALICYLATE DOSAGE IS INDICATED, GIVE BETTER-TOLERATED BUFFERIN.

Each BUFFERIN tablet combines 5 gr. acetylsalicylic acid with magnesium carbonate and aluminum glycinate. BUFFERIN is available in bottles of 12, 36, 60 and 100 tablets.

References: 1. Fineman Smith, P.: J.A.M.A. 158:246, 1955. 2. J.A.M.A. 141:124, 1949. 3. M. Times 81:41, 1953.

BUFFERIN ACTS TWICE AS FAST AS ASPIRIN
DOES NOT UPSET THE STOMACH

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19 West 50 Street, New York 20, N. Y.

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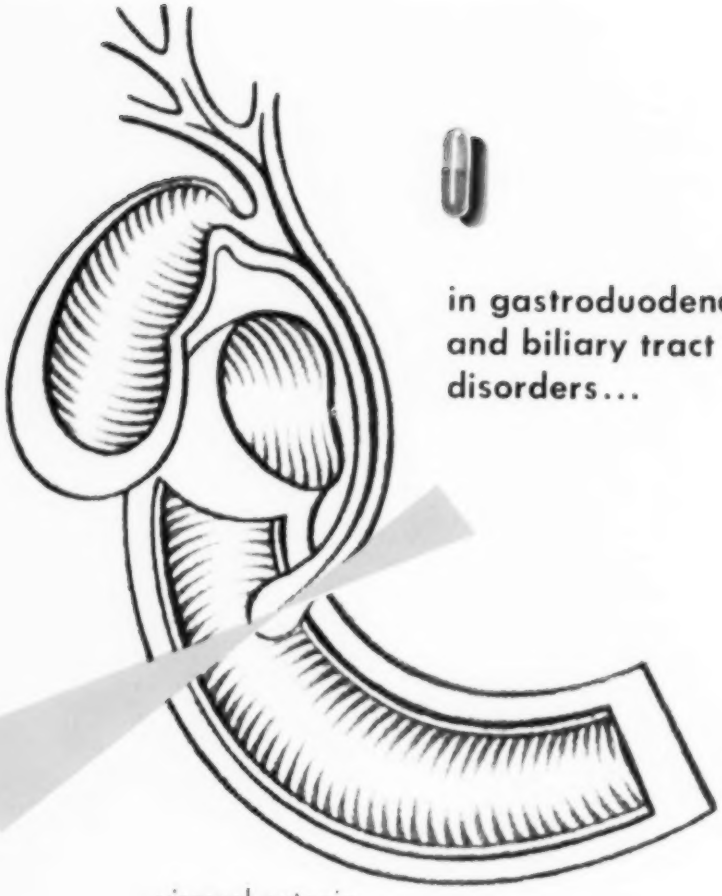

in gastroduodenal and biliary tract disorders...

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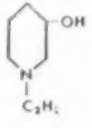
relieves **pain** ⇄ **spasm** *usually in 10 minutes*

prompt action at the site of visceral pain gives unusually rapid relief

prolonged control of spasm gives relief up to four hours

no interference with digestive secretions, normal tonus or motility



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babies

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EFFECTIVE

Over 96 per cent live delivery in 1200 patients . . . *including 540 habitual aborters.*[1]

SAFE

No side effects in pregnant patients . . . *in either low or massive dosage.*[2]

COMPREHENSIVE

A Formulation Proved By Extensive Clinical Experience,[1, 2, 3, 4]

— Each **desplex** tablet contains 25 mg. of rapid-acting *ultra*-micronized diethylstilbestrol U.S.P., with protective and effectuating amounts of vitamin B complex and vitamin C.

— For further information and a generous trial supply of **desplex**, write to:

FRANK L. HALEY, M.D. — Medical Director

Grant Chemical Co., Inc.

New York 10, N. Y.

REFERENCES

1. Peña, E. F.: Med. Times 82:921, 1954; Am. J. Surg. 87:95, 1954
2. Karnaky, K. J.: South. M. J.: 45:1166, 1952
3. Gitman, L. and Koplowitz, A.: N. Y. St. J. Med. 50:2823, 1950
4. Ross, J. W.: J. Nat. M. Assoc. 43:20, 1951; 45:223, 1953

Any patient sick enough to

Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

Incorporating the Long Island Medical Journal and Western Medical Times

CONTRIBUTIONS Exclusive Publication: Articles are accepted for publication with the understanding that they are contributed solely to this publication, are of practical value to the general practitioner and do not contain references to drugs, synthetic or otherwise, except under the following conditions: 1. The chemical and not the trade name must be used, provided that no obscurity results and scientific purpose is not badly served. 2. The substance must not stand disapproved in the American Medical Association's annual publication, New and Nonofficial Remedies. When possible, two copies of manuscript should be submitted. Drawings or photographs are especially desired and the publishers will have half tones or line cuts made without expense to the authors. Reprints will be supplied authors below cost.

Any patient sick enough to need broad spectrum antibiotics deserves the added protection against monilial superinfection afforded by

Mysteclin

(Mi-sték'-lin)

STECLIN · MYCOSTATIN

(SQUIBB TETRACYCLINE-NYSTATIN)

better tolerated broad spectrum antibacterial therapy

plus

antifungal prophylaxis

in one capsule

Each Mysteclin capsule contains 250 mg. of Steclin (Squibb Tetracycline) Hydrochloride, the broad spectrum antibiotic which is better tolerated and produces higher blood and urinary levels than its analogues, and 250,000 units of Mycostatin (Squibb Nystatin), the first safe antibiotic effective against fungi.

Minimum adult dose: 1 capsule q.i.d.

Supply: Bottles of 12 and 100.

. . . and Mysteclin costs the patient only a few pennies more per capsule than other broad spectrum antibiotics which do not provide antifungal prophylaxis.

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Off the Record . . .

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imprinted German apothecary jar will be sent in appreciation for each accepted contribution.

Too Young?

A young lady appeared for her prenatal check-up with her second pregnancy. Knowing she had been unmarried with her first, I asked about the father of this impending child.

Finding him to be the same as the first, I asked if they had seen fit to get married by this time, and the answer was negative.

A little perplexed, I asked, "Why not?"

Her reply was, "Doctor, I feel I'm too young to be tied down!"

P. R. F., M.D.
Guthrie, Oklahoma

A New Specialty

Mrs. "Doe" came in to see me for the first time, saying she was referred to me by her neighbor—a Mrs. "Smith."

She appeared at once to be the very inquisitive type, asking more questions than giving answers about her illness.

Finally she got directly to the point. "Mrs. Smith says that you're her private physician; is that a fact?"

"Yes," I replied.

"Well, doctor, you can trust me, but just what is wrong with her 'privates'?"

I do not recall my answer.

L. C. D., M.D.
New Orleans, Louisiana

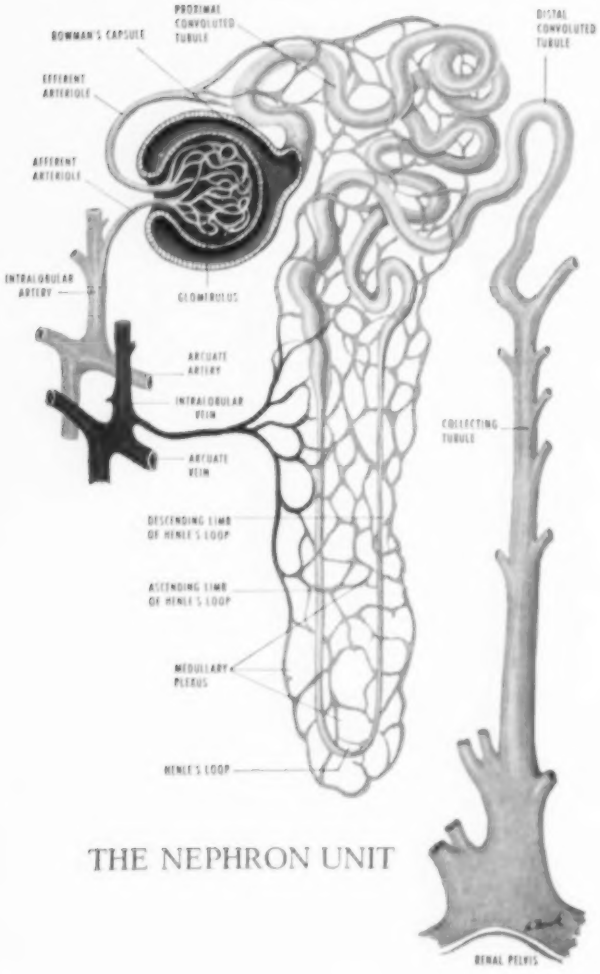
Determined

I had been treating a woman, 28 yrs. of age, for sterility. She was very anxious to have a child and very cooperative. We had tried everything and she still had not conceived. I explained again and again that her husband might be the one at fault, but I had been unable to get him in for a check-up. Finally, I told her that I could not continue to treat her unless she brought her husband in, as I felt almost certain she was all right. She agreed to bring him, but said, "You see, you may be right, but I ain't so sure it's my husband's fault that we can't have a baby—you see, doctor, I don't depend on him entirely!"

A. G. L., M.D.
Tallulah, Louisiana

—Continued on page 15a

New, Effective,
Non-Mercurial Oral Diuretic



THE NEPHRON UNIT

known and accepted from Acapulco to Addis Ababa

ENTERO-VIOFORM®

potent anti-diarrhea agent now available in the U.S.A.

Entero-Vioform, a powerful agent for use in simple infectious diarrhea and amebic dysentery, is now available for the first time in the United States. This well-tolerated, virtually nontoxic anti-diarrhea agent is especially useful for travelers, who are particularly vulnerable to diarrhea.

Entero-Vioform is available in tablets (also known as Vioform® tablets), each containing 250 mg. iodochlorhydroxyquin U.S.P.

VIOFORM® (iodochlorhydroxyquin U.S.P. CIBA)

CIBA
SUMMIT, N. J.

a/ciba

—Continued from page 19a

Talented

At a recent party, I had an occasion to meet a patient that I had treated as a sterility problem. After introducing her to my spouse, she proceeded to tell her she had gone to Dr. A——; Dr. B——; and Dr. C—— but only when I took charge did she get pregnant. I had some explaining to do at home that night!

L. G. P., M.D.
Baton Rouge, Louisiana

Parlez-vous?

While attending a GYN clinic, the nurse was asked to call in the next patient, a Mrs. Le Courriere. She promptly brought the house down when she called out as loud as possible, "Mrs. LEUKORRHEA, Mrs. Leukorrhea."

W. K. G., M.D.
New Orleans, Louisiana

Helpful Husband

A patient was delivered about midnight. The next morning, in making rounds, the chart had recorded that the patient had voided just after having her "A.M. attention." I remarked that I was glad she had voided, but was told that she did not—that she would like to if she could. After much checking back and forth as to the correctness of the nurse's report, it was brought out that the patient's husband had stopped in to see the mother. As he could not find the Men's room on the maternity floor, the bed pan looked to be just the thing, and he used it. The patient was too embarrassed to tell the nurse, so she got credited with the voiding. All's well that ends well.

G. D. F., M.D.
New Orleans, Louisiana

A Relief

I was preparing to give an injection in the home and held the ampule to be injected against a table while scoring it with a file. The table vibrated, making a rather loud rasping noise. My patient raised up from her bed and looked for a moment, and then with a great sigh of relief said, "Oh, I thought you were sharpening your needle."

G. G. D., M.D.
Lawton, Oklahoma

Doctor or Vet?

I have had under my professional care for several years, an elderly female patient who was subject to rather frequent recurrent episodes of cardiac asthma. Whenever summoned, I would respond to her call promptly (whether it be day or night) in view of the bonafide nature of her illness.

At 3 A.M. one morning, I received an urgent call to come to her home quickly because of the dire emergency that existed.

Upon entering her home, I found this dear lady with tears streaming down her face, pointing to her pet dog lying in the corner. Alas! The poor beast had convulsions, and would I please do something about it?

E. A. P., M.D.
Washington, D. C.

Areas of Clinical Study / *One of a series*

ANEMIA OF INFANCY

Recently completed—1954—studies [1, 2] again confirm the unique value of Roncovite (cobalt-iron) in the prevention and treatment of infant anemia.

Clinical results show that routine administration of Roncovite can completely prevent the iron deficiency which so frequently develops in the first six months of life.

RONCOVITE (*Cobalt-Iron*) *has introduced a wholly new concept in anti-anemia therapy. It is based upon the unique hemopoietic stimulation produced only by cobalt. The application of this new concept has led to marked, often dramatic, advances in the successful treatment of many of the anemias.*

EFFECTIVE

"It is a significant fact that none of the . . . cases receiving iron as well as cobalt required additional iron therapy and that the haemoglobin levels of this group remained consistently and significantly higher than those in any other group after the age of 4 months."[1]

". . . there can be no doubt that the average hemoglobin values . . . are greater in the cobalt-iron (Roncovite) treated group."[2]

PATIENT SATISFACTION

". . . the mothers of these anaemic infants frequently stated spontaneously that the children were much improved, with increased appetite and vigour. It seems possible, therefore, that even if anaemia in premature infants does not usually produce marked symptoms, there is a subclinical debility which becomes more evident in retrospect."[1]

SAFETY

"There was no evidence of toxicity in any case under treatment: . . . There is nothing to suggest that cobalt in any way impairs the general progress or rate of weight gain in premature infants in the dosage employed."[1]

"The babies were closely observed daily for ill effects of the medication while at the premature unit and when they returned for check ups. None of them showed harmful effects despite the large doses . . . A few of the babies . . . have been followed for more than 100 days with no ill effects noted."[2]

SUPPLIED:

RONCOVITE DROPS

Each 0.6 cc. (10 drops) provides:

Cobalt chloride . . . . . 40 mg.
(Cobalt 9.9 mg.)
Ferrous sulfate . . . . . 75 mg.

RONCOVITE TABLETS

Each enteric coated, red tablet contains:

Cobalt chloride . . . . . 15 mg.
Ferrous sulfate exsiccated . . . . . 0.2 Gm.

RONCOVITE-OB

Each enteric coated, red capsule-shaped tablet contains:

Cobalt chloride . . . . . 15 mg.
Ferrous sulfate exsiccated . . . . . 0.2 Gm.
Calcium lactate . . . . . 0.9 Gm.
Vitamin D . . . . . 250 units

DOSAGE:

One tablet after each meal and at bedtime. In children one year or older 0.6 cc. (10 drops); infants less than one year 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

1. Coles, B. L., and James, U.: Arch. of Disease in Childhood 29:85 (1954).
2. Quilligan, J. J., Jr.: Texas State J. Med. 50:294 (May) 1954.

Bibliographies of 192 references available on request.

RONCOVITE

The original, clinically proved cobalt-iron product.

LLOYD

BROTHERS, INC.

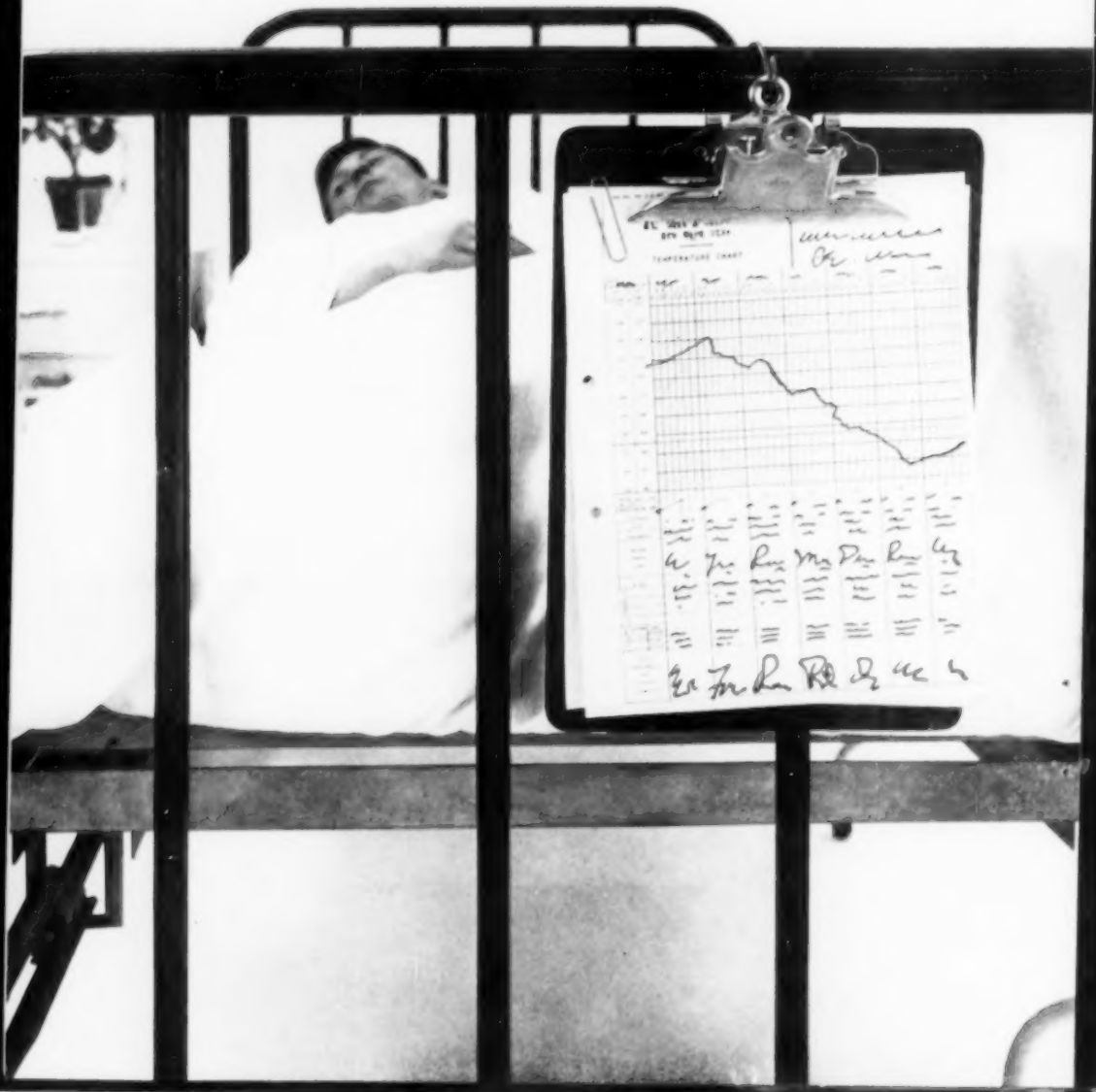
Cincinnati, Ohio

In the Service of Medicine Since 1870

for the patient with fever,

SF

means *Pfizer* antibiotics, *fortified with vitamins*



to support recovery, speed convalescence

Tetracyn®-SF*

BRAND OF TETRACYCLINE WITH VITAMINS

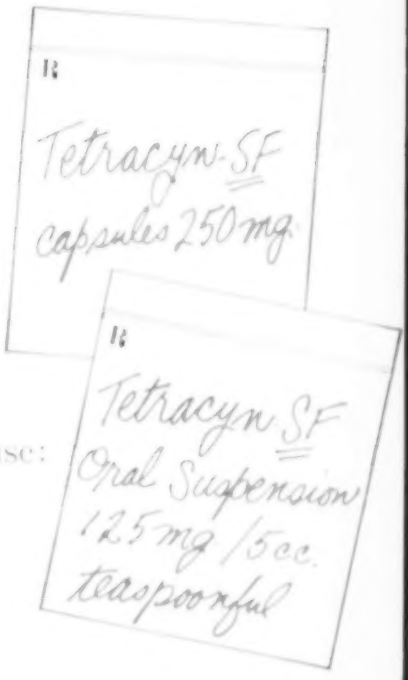
the leading broad-spectrum antibiotic, discovered by Pfizer

with water-soluble vitamins in combinations originated by Pfizer

When treating patients with infections, experience has shown that "one must aim at maintaining the normal daily nutritional requirements, replacing previous depletions and current losses, and supplying whatever increased requirements may be related to the nature of the illness."[1] This modern concept provides the means for "treating the 'whole' patient."[2]

Tetracyn-SF has already demonstrated full antibiotic effectiveness in comparative trials with Tetracyn* (brand of tetracycline) alone[3] and, in the hands of thousands of physicians, has shown

Superior Blood Levels
Superior Toleration
Superior Clinical Effectiveness



Two effective dosage forms for oral use:

Terramycin-SF* (brand of oxytetracycline with vitamins) is also available.

Tetracyn-SF and Terramycin-SF are formulated to provide the minimum daily dose of each antibiotic (1 Gm. of Tetracyn or Terramycin) plus the stress vitamin formula recommended by the National Research Council.

*Trademark for the vitamin fortified antibiotics provided by Pfizer.

1. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. Prepared in Collaboration with the Committee on Therapeutic Nutrition, Food and Nutrition Board, National Research Council, Washington, D. C., 1952.

2. Marti-Ibañez, F.: Antibiotic Med. *1*:247 (May) 1955.

3. Dumas, K. J.; Carbozzi, M., and Wright, W. A.: Antibiotic Med. *1*:296 (May) 1955.

Pfizer PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.

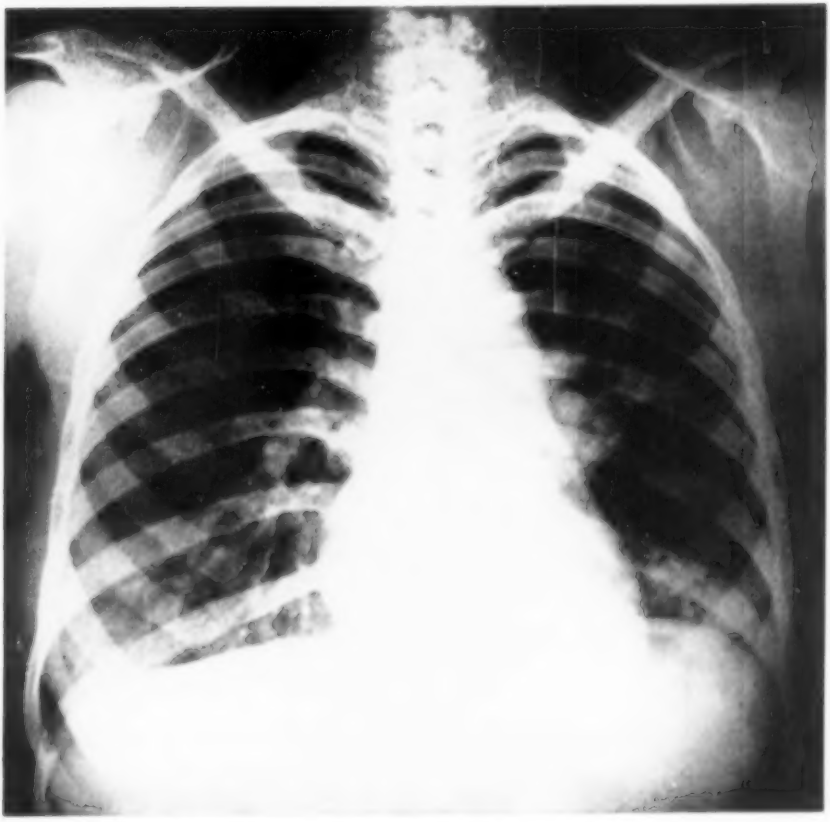
Diagnosis, Please!

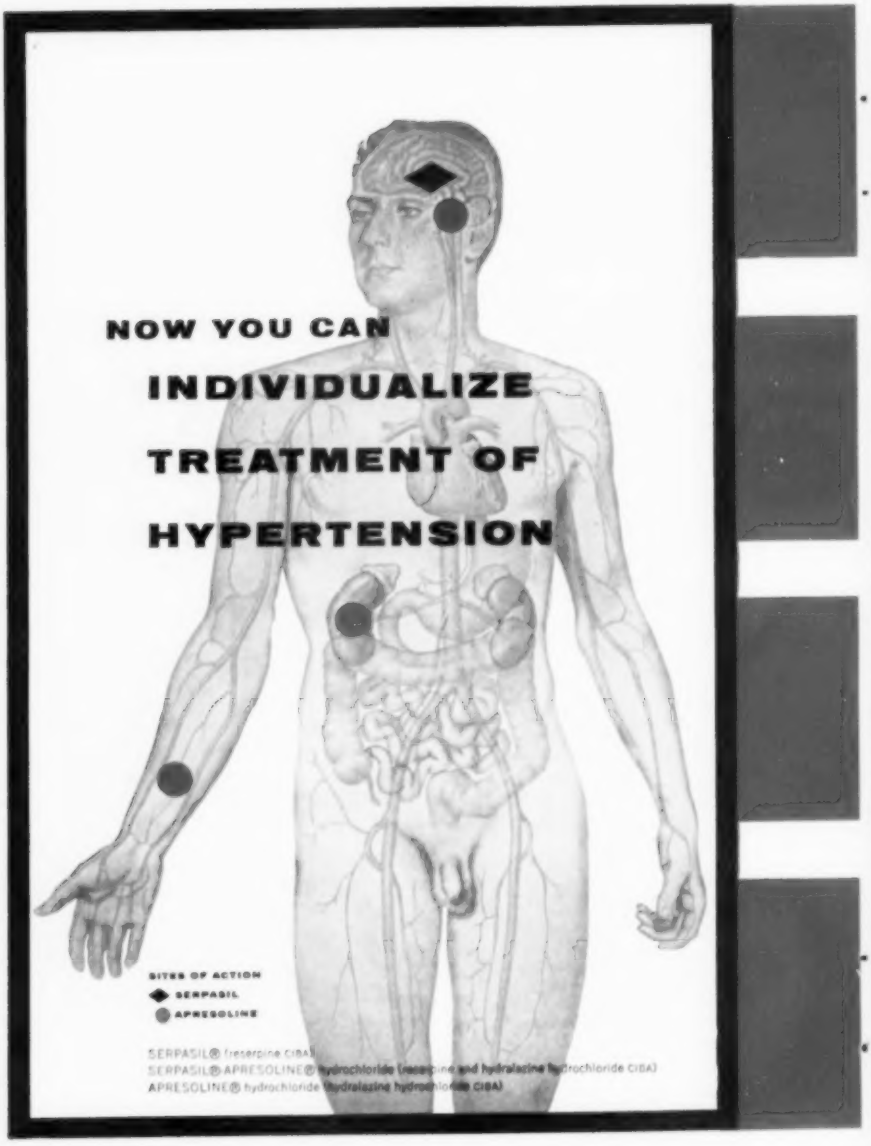
Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS *YOUR* DIAGNOSIS?

1. Abscess
2. Abscess in malignancy
3. Abscess in infarct
4. Bleb
5. Bronchiectasis

(ANSWER ON PAGE 84a)




NOW YOU CAN
INDIVIDUALIZE
TREATMENT OF
HYPERTENSION
SITES OF ACTION
SERPASIL
APRESOLINE
SERPASIL® (reserpine CIBA)
SERPASIL® APRESOLINE® hydrochloride (reserpine and hydralazine hydrochloride CIBA)
APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA)

to help you relieve **muscle spasm** *and* **pain**

safely in **more rheumatic** *patients*

mephosal®

Relaxant mephenesin, "solubilized"* and made more predictable, with analgesic sodium salicylate. With MEPHOSAL your patients get . . . .

1. Surer relief from muscle pain and spasm; **2.** Greater comfort-in-motion, the ability to move around, work, live more normally, and **3.** Less likelihood of crippling disablement or postural deformity, since muscle rigidity and atrophy are avoided or minimized.

MEPHOSAL is safe, risk-free and worry-free. Will not affect blood pressure, produce or influence diabetes, or produce steroid effects.

Try **MEPHOSAL** first in **LOW BACK PAIN, PAINFUL SHOULDER, STIFF NECK, NIGHT CRAMPS,** or wherever you must relieve muscle spasm and pain promptly.

For Best Results start with full dosage: at least 2 Capsules or 3 Tablets, or 1 to 2 teaspoonfuls Elixir, 3 or 4 times a day, with milk or after meals. After 2 days reduce to 1 capsule, 2 tablets, or 1 teaspoonful elixir, as necessary. (Capsules contain mephenesin and sodium salicylate; tablets and elixir contain in addition homatropine methylbromide).

Detailed information to physicians on request.

CROOKES LABORATORIES, INC.
Therapeutic Preparations for the Medical Profession
MINEOLA, NEW YORK

Crookes

*Patent applied for

Coroner's Corner

THE WORLD'S WORST MARKSMAN

Study of the clothing worn by the victim of an obscure or violent death will frequently furnish information and data which help solve an otherwise insoluble problem.

The body of a 65-year-old man was brought to the Coroner's Office by the police along with an automatic pistol and two empty shell cases found at the scene of death. A single close-range gunshot entrance wound was present in the right temporal region. Autopsy disclosed that death was due to laceration of the brain. A single bullet was found within the brain. There were no other injuries.

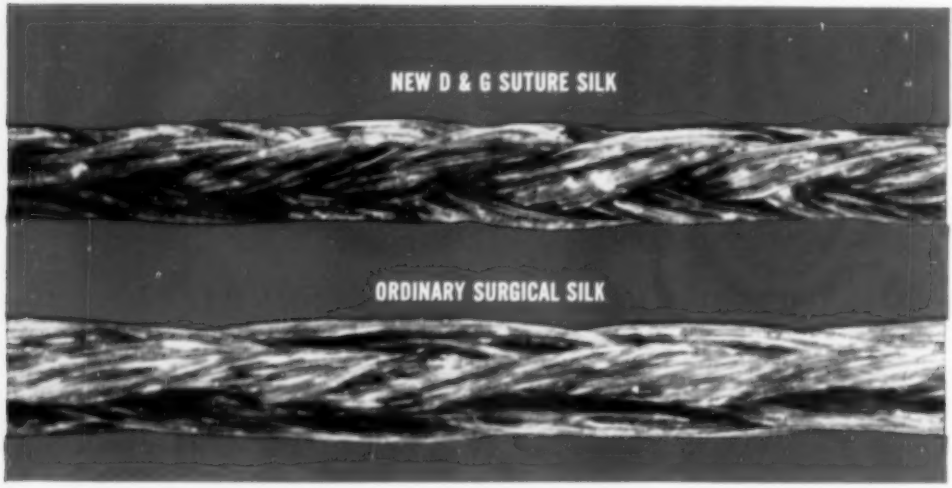
While the circumstances seemed to point to suicide (the victim was known to have been depressed), the police were unable to account for the firing of *two* bullets. Examination of the decedent's fedora hat, brought in with the body, furnished a logical explanation for the presence of two cartridge cases.

On the right side of the hat, above the band, there was a contact type entrance gunshot perforation with fouling and stippling of the surrounding area by smoke and spent gunpowder. On the inside of the hat, the perforation was some distance above the sweat band. An exit type perforation was present on the left side of the crown, marking the site of egress of the bullet. On the underside of the right side of the brim there was a second separate area of fouling and stippling. With the hat on the head of the deceased, this latter area was in line with the site of entrance of the fatal bullet.

The shooting episode was reconstructed on the basis of the above findings. The would-be suicide victim had first held the gun against the side of his hat and had shot through the hat and over the top of his head. He then improved his aim by lowering the gun below the brim and was successful with his second shot.

Thus the victim had missed his own head at contact range, admittedly an example of marksmanship at its worst.

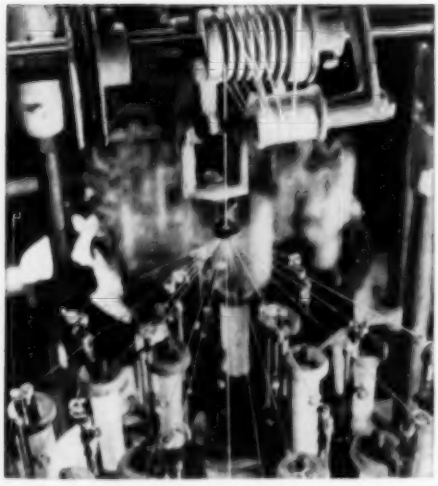
L.A., M.D.



▲ **There's more silk per suture.** Photomicrography shows greater strength and uniformity of new D & G suture silk as compared to ordinary silk. See how the x's indicate the high braid count.

TO GIVE YOU STRONGER SILK

D & G BUILDS NEW BRAIDING PLANT TO GIVE YOU THE HIGHEST BRAID COUNT



▲ **For greatest strength of silk** in a given diameter, D & G especially redesigned this machine. To braid so many filaments so tightly into a single 10-foot strand of 4-0 silk takes one hour. Rigid control of humidity and temperature during braiding keeps silk uniformly strong and pliable.

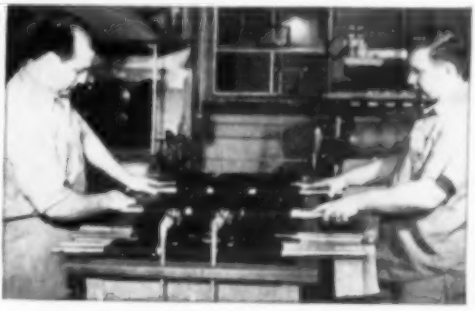
This is the new D & G suture silk, the first to be produced in a suture laboratory rather than a textile mill. New processing techniques, beginning with triple A quality raw silk, provide ANACAP® silk with a higher braid count. A higher braid count gives stronger silk—a firmer, more uniform strand.

There's more silk per suture. Greater tensile strength permits use of smaller-diameter sizes, with less resulting tissue trauma and foreign body reaction. *It's easier to handle.* Braided to minimize "splintering" and "whiskering," ANACAP silk passes readily through tissues. Firmer, it sets in swift sure knots, it won't "bush" —threads with ease. *Absolutely non-capillary*, it has no wick like action, resists body fluid and won't spread early localized infection. *Economical*, ANACAP silk withstands sterilization at least 6 times.

▲ **Not only uniform tensile strength,** but also uniform texture and diameter of strands result when D & G stretches wet silk from 5% to 20%, depending on size. This precise stretching aligns the molecules for utmost strength.

D & G suture silk is dye-fast to a standard never before achieved. Neither xylol, boiling water, nor autoclaving affects the vegetable logwood dyes. ▶

▲ **Softer and cleaner silk** comes from purification. D & G's special solution removes all gum and other impurities.



Save time and money with these unique packages

◀ 1. **Surgilope® Sterile Pack** *(Seventeen 18" strands—dry, pre cut)*

◀ 2. **Measuroll® "tape-measure" pack** *(20 strands, each 10 yds. long)*

◀ 3. **Spiral Wound, Sterile** *(25 feet)*

Save, too, with

Dry-tubed, sterile *(Seventeen 18" strands, pre cut)*

Sterile tubed, with Atraumatic® needles

Pre-threaded—on milliner needles *(18" lengths, sizes 4-0, 6-0)*

Spooled *(25' and 100' lengths)*

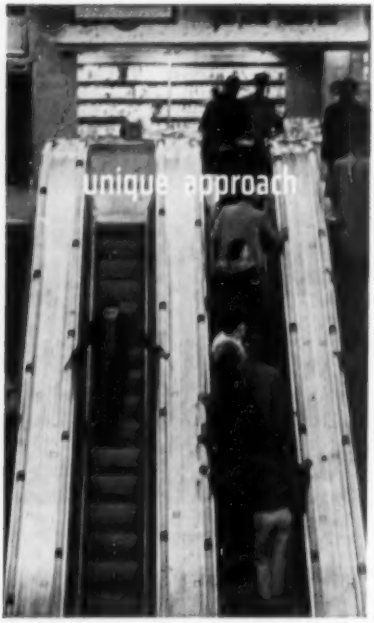
Whenever you use D & G products, you are participating in the educational program of the Surgical Film Library. Write for catalog.

Photomicrographs (untouched) by E. J. Thomas, Stamford Laboratory of the Research Division of the American Cyanamid Company, Stamford, Conn.
Method used: reflected illumination, 75 x. Material used: black braided silk sutures, size 4-0.

DAVIS & GECK inc.
a unit of American Cyanamid Company
Danbury, Connecticut

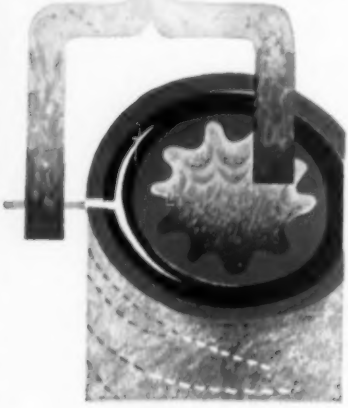
ADVANCING WITH SURGERY

*Trade-mark



NEW

unique two-way approach



the unique two-way approach of COACTYN
provides the answer for rapid and prolonged
relief in functional g.i. distress

Coactyn

trademark

the pH Adjusted Antispasmodic

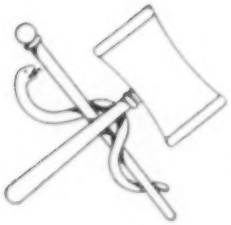
COACTYN, with its new *two-way approach* in antispasmodic therapy, not only acts directly on the g.i. tract to relax smooth muscle cells within seconds, but simultaneously blocks the overactive parasympathetic nerve impulses, with a resultant prolonged spasmolytic effect.

Each teaspoonful (5 cc.) contains:
phenobarbital . . . . . 8 mg.
homatropine methylbromide . . . 0.5 mg.
In a pH adjusted phosphorated carbohydrate solution
alcohol, 9.5%

supplied in bottles of 3 fl.oz. and 16 fl.oz.

Kinney

KINNEY & COMPANY, INC.
Columbus, Indiana



What's Your Verdict?

Edited by Ann Pickrich, Member of the Bar of New Jersey

At 9:30 A.M. a child was taken to the operating room for a tonsillectomy. The operation lasted approximately one hour, and the child was returned to her room at 11:30 A.M., still in a coma, hot and feverish, with a temperature of 107 degrees. Despite the repeated efforts of the mother to locate the doctor, he did not visit his patient until 5:15 A.M. In response to the mother's inquiry why he had not come earlier, he said he was so busy he did not have the time. The child died the next morning as a result of cerebral edema due to anoxia.

The day before the operation, the mother had informed the doctor that the child had a cold and running nose. He was leaving town, he said, and had to operate the next day; the cold did not matter.

In an action by the mother against the doctor, the testimony of expert witnesses established that it is not good medical practice to leave a patient unseen for five or six hours after an operation, nor to administer ether and operate while the patient has a cold. Nevertheless, the trial court charged the jury:

"The Court instructs you, gentlemen of the jury, that if it does not appear that if the defendant or another physician or a competent nurse had been with the deceased, she would not have died. . . . then there would be lack of proximate cause."

The jury returned a verdict for the defendant, and plaintiff appeals.

"The trial court's charge is erroneous," pleads the plaintiff, "because it does not permit a party to show that a doctor violated his duty to exercise ordinary care in the application of his skill and learning by lay witnesses. Medical experts alone could express an opinion as to whether the defendant, or another physician, if present, would have saved the life of the child."

"The medical profession is a highly specialized field," defendant argues, "and the test of whether or not a physician is negligent can only be determined by an expert."

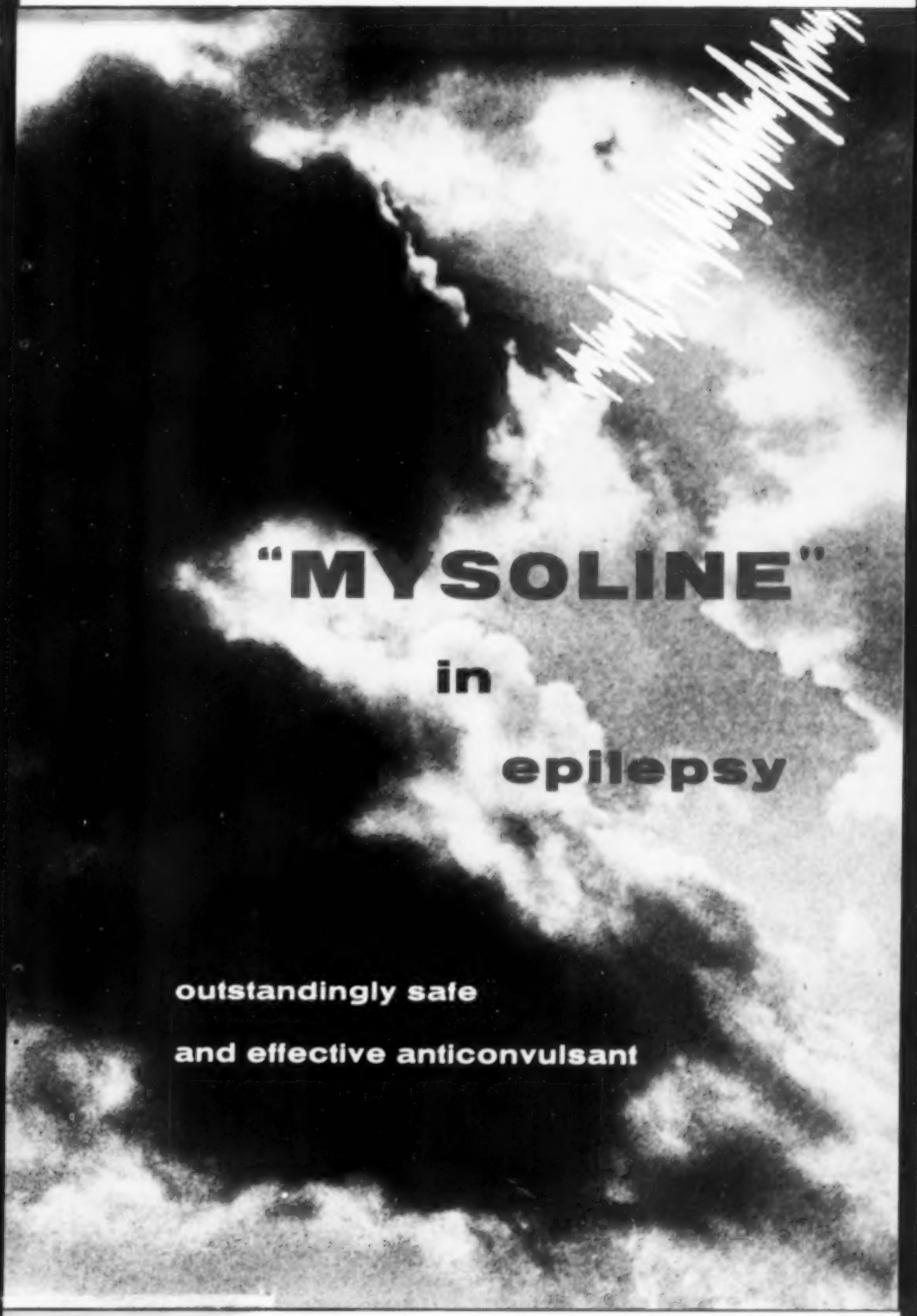
How would you decide?

* * * * *

The charge was held erroneous, and a new trial ordered:

"Usually, what is the standard of care required of a physician or surgeon is one concerning highly specialized knowledge with respect to which a layman can have no reliable information. For that reason, in many instances proximate cause can be established only through the medium of expert testimony. There are others, however, where non-expert jurors of ordinary intelligence may draw their own inferences from the facts and circumstances shown in evidence. When the standard of care, that is, what is in accord with proper medical practice is once established, departure therefrom may, in most cases, be shown by non-expert witnesses."

Based on opinion of Supreme Court of North Carolina.


"MYSOLINE"
in
epilepsy
outstandingly safe
and effective anticonvulsant

Suggested dosage schedules for use of "Mysoline," employed alone, or in combination with other anticonvulsants.

Adults and children over 8 years: *In patients receiving no other anticonvulsants:* "Mysoline" therapy is started with 0.25 Gm. daily, and dosage is gradually increased at weekly intervals, until maximum therapeutic effect is achieved.

Order of Dosage Increase for Adults and Children Over 8 Years

1st week	2nd week	3rd week	4th week
0.25 Gm. (1 tablet) daily, at bedtime	0.5 Gm. (2 tablets) daily, 1 on arising, 1 at bedtime	0.75 Gm. (3 tablets) daily, in 3 divided doses	1 Gm. (4 tablets) daily, in 4 divided doses

When dosage is increased beyond 1 Gm., the daily intake is administered in four divided doses, and increments of 0.25 Gm. are added at weekly intervals as indicated above. Children 8 years and older are usually able to tolerate the same dosage as adults. ("Mysoline" is not recommended for use in dosages over 2 Gm. daily.)

In patients already receiving other anticonvulsants: "Mysoline," 0.25 Gm., is given daily and dosage is gradually increased, while the dosage of the other drug(s) is gradually decreased.

Children up to 8 years of age: 0.125 Gm. is administered on the same basis of therapy as suggested for adults. (In many cases control has been achieved with 0.375 Gm. to 0.75 Gm. daily.)

Supplied: No. 3430 — 0.25 Gm. tablets (scored). Bottles of 100 and 1,000.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

1. Smith, B., and Forster, F. M.: Neurology 4:137 (Feb.) 1954. • 2. Editorial: Brit. M. J. 1:1028 (May 1) 1954. • 3. Lambros, V. S.: Read before the Annual Meeting of the American League Against Epilepsy, Washington, D. C., May 1, 1954. • 4. Smith, B. H., and McNaughton, F. L.: Canad. M.A.J. 68:464 (May) 1953. • 5. Doyle, P. J., and Livingston, S.: J. Pediat. 43:413 (Oct.) 1953. • 6. Pence, L. M.: Texas State J. Med. 50:290 (May) 1954.

"MYSOLINE"®

Brand of Primidone

in epilepsy

"... comes closest to being an all purpose anticonvulsant ..."[1]

"... most convincingly effective in grand mal ..."[2]

"... may prove more beneficial than most drugs used for the psychomotor group ..."[3]

COMPLETE CONTROL OF SEIZURES IN 80 PER CENT OF PATIENTS WITH GRAND MAL

Lambros[3] reports that with "Mysoline," complete control of all attacks was achieved in 168 of 208 previously untreated patients with major seizures; in 14, partial control was obtained, this representing a reduction of 80 per cent in the frequency and severity of seizures.

FAVORABLE RESPONSE IN OVER 37 PER CENT OF REFRACTORY CASES

Smith and McNaughton,[4] using "Mysoline" in a group of 66 patients who had responded poorly or not at all to other anticonvulsants available, report that of 61 cases evaluated, over 37 per cent had most of their attacks reduced by half or more. More than half the patients had experienced seizures for more than 10 years, and 10 had had seizures for over 30 years.

NO SERIOUS SIDE REACTIONS IN 100 CASES

Doyle and Livingston note that in 100 epileptic patients on "Mysoline," no serious toxic reactions occurred. "Routine urine examinations and blood counts were made on every patient and showed no abnormality at any time." Side effects such as drowsiness and minor disturbances of equilibrium, when they occurred, "disappeared spontaneously in the majority of the patients within a few weeks after their onset."[5]

A detailed abstract of an important report on "Mysoline" is presented overleaf. A reprint of this report as well as literature providing an extensive bibliography will be sent to you on request.

Electroencephalogram showing typical wave pattern of a patient with grand mal seizures.

"MYSOLINE" PRODUCED COMPLETE CONTROL OF SEIZURES IN 71 PER CENT OF PATIENTS WHO HAD FAILED TO RESPOND TO OTHER MEDICATION.[6]

Pence's[6] report covers 45 patients ranging in age from 3 to 58 years who were observed for a period of 6 to 26 months. Cases of grand mal, petit mal, focal seizures, and psychomotor epilepsy were included in this series.

"Mysoline" was gradually added to current medication which in turn was gradually reduced during a two week period. The dosage ranged from 0.25 Gm. to 2.25 Gm. daily.

Results of therapy: Excellent results were obtained in 71 per cent of patients (32); improvement was noteworthy in 22 per cent (10); only 7 per cent (3) were not benefited.

The greatest improvement was noted in the 19 patients with grand mal, 16 being completely controlled. These patients received "Mysoline" alone or in combination with phenobarbital or a hydantoin.

The 2 patients with psychomotor attacks became completely controlled with "Mysoline" alone. Marked improvement was also noted in 9 of the 12 patients with petit mal.

Pence points out that many patients were "well pleased with the results obtained when 'Mysoline' was substituted for all or part of their previous medication." Improvement in mental alertness was also noted with "Mysoline" therapy.

Side reactions: Urinalyses and blood counts remained normal; no skin rash was noted. When side effects such as drowsiness and ataxia occurred, they disappeared after the proper dosage of "Mysoline" was established.

"MYSOLINE"®

in epilepsy

Ayerst Laboratories make "Mysoline" available in the United States by arrangement with Imperial Chemical (Pharmaceuticals) Limited. 5563

electroencephalogram showing typical wave pattern of a patient with grand mal seizures.

Severe chronic cystic acne of face, neck, and shoulders in 18 year old male; treatment based on diet, x-ray, vitamins, and vaccines unsuccessful over 5 year period.

Following 4 months of treatment with "Premarin" Lotion on face and neck, infection and cysts have cleared. Untreated shoulders show no improvement.

Refractory cases of

acne vulgaris

respond to

"Premarin"® Lotion

Conjugated Estrogens (equine) for topical application

A highly gratifying response, as in the patient shown above, was achieved with "Premarin" Lotion in 70 to 80 per cent of patients of both sexes with acne vulgaris that had failed to respond to other therapy.[1] "Premarin" Lotion is easy to apply; permits dosage control to eliminate possibility of side effects; is esthetically acceptable to both male and female patients.

also effective in seborrheic alopecia

In another series of patients, scaling, itching, and falling hair (particularly about the vertex of the scalp) were controlled within three to six weeks by the application of "Premarin" Lotion two or three times daily.[2] No systemic effects were noted.

Supplied: No. 875 – Bottles of 60 cc. (1 mg. per cc.) with applicator.

Detailed information available upon request.

1. Shapiro, I.: Postgrad. Med. *15*:503 (June) 1954; J. M. Soc. New Jersey *52*:6 (Jan.) 1955.

2. Shapiro, I.: J. M. Soc. New Jersey *50*:17 (Jan.) 1953.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

5545

After Hours

Photographs with brief descriptions of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.

Dr. Glassman with his kayak at Chesapeake Bay.

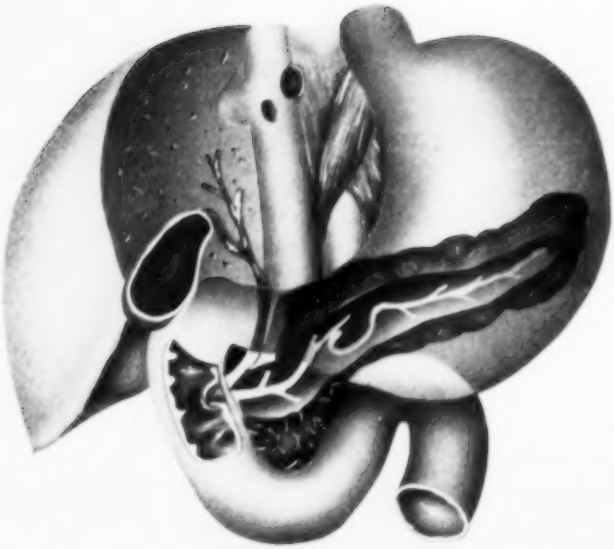
"My greatest extra-curricular pleasure for the past two summers has been kayaking in the Chesapeake Bay. I believe my routine to be a streamlined way of really getting the most fun and exercise in the least time.

"I scoot to the Bay after A.M. hours, and in 30 minutes am double-paddling off at 6 knots for a 6 to 10 mile 'cruise' on 3 or 4 sunny afternoons a week, starting in May and going through October.

"I have two kayaks—a folding double-seater and a single that is a version of the Greenland Eskimo type. Swimming off Millers Island is usually included; occasionally some fishing. Three hours of exposure to sun, water and bay breezes is a tonic beyond compare.

"There's nothing like it!"

Dr. Edward L. Glassman, 4037 Falls Road, Baltimore, Maryland.



constipation
and
related
functional
G. I. distress

markedly relieved in
8 out of 10 patients*
by inexpensive, physiologic
stimulant

DECHOLIN® with Belladonna

improved liver function* PLUS *reliable spasmolysis

Steps up flow of dilute bile by *hydro*choleresis • physiologic elimination without catharsis • relieves spasm • no cramping • no evidence of tolerance • helps establish normal bowel habits

One or, if necessary, two *Decholin*/Belladonna Tablets t.i.d. gives your patients more effective relief of constipation and related G.I. complaints: flatulence, bloating, belching, nausea and indigestion.

Each tablet contains *Decholin* (dehydrocholic acid, *Ames*) 3¾ gr., and extract of belladonna ⅛ gr. (equivalent to tincture of belladonna, 7 minims). Bottles of 100 and 500.

*King, J. C.: Am. J. Digest. Dis. 22:102, April, 1955.

AMES
COMPANY, INC • ELKHART, INDIANA • Ames Company of Canada, Ltd., Toronto

at ease... you may put your own mind at ease as well as calm your patient when you prescribe Noludar as a sedative (or in larger dosage as a hypnotic). There is little danger of habituation or other side effects because Noludar is not a barbiturate. Available in 50-mg and 200-mg tablets, and in liquid form, 50 mg per teaspoonful.

REST COMES BEST to the relaxed patient. Noludar relaxes the patient and usually induces sleep within one-half to one hour, lasting for 6 to 7 hours. Clinical studies in over 3,000 patients have confirmed the usefulness of Noludar in the relief of nervous insomnia and daytime tension. Noludar 'Roche' is not a barbiturate.

Noludar ® -
brand of methyprylon

BLUE
AT
BREAKFAST?

BONADOXIN*

stops morning sickness

RESULTS
of
this
new
COMBINATION

In 100 patients with severe nausea and vomiting, Weinberg reports 88% good to excellent results.[1] In another series, BONADOXIN abolished vomiting in 40 of 41 gravida, eliminated nausea in 30 of the 41.[2]

Each BONADOXIN tablet contains:

MECLIZINE HCl	25 mg.
PYRIDOXINE HCl	50 mg.

Mild cases: One BONADOXIN tablet at bedtime.
Severe cases: One at bedtime and on arising.
In bottles of 25 and 100, prescription only.
Also indicated in post-radiation sickness, nausea following surgery, Ménière's syndrome.

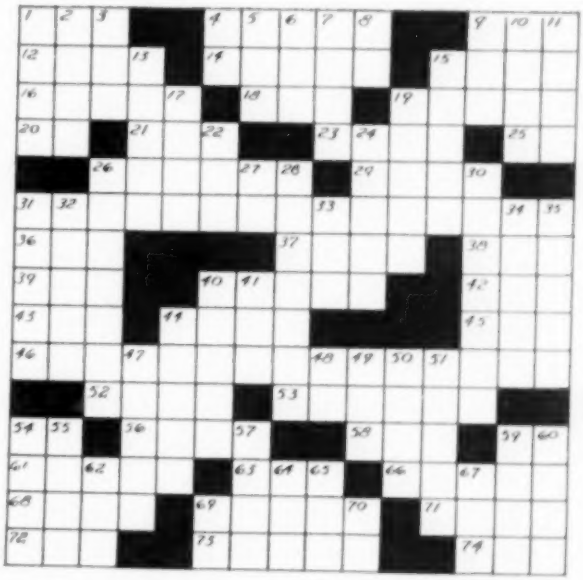
1. Weinberg, Arthur and Werner, W. E. F.: Bonadoxin, a new effective oral therapy for hyperemesis gravidarum. Am. Pract. and Dig. of Treatment. In press. 2. Personal communication. 3. Berenson, F.: Bonadoxin: oral therapy for nausea and vomiting of pregnancy. In press.

Chicago 11, Illinois

MEDICAL TEASERS

A Challenging Crossword Puzzle for the Physician

[Answer on page 104a]



Constructed by Dana McBrayer

ACROSS

1. Professional organization
4. Rectal injection
9. Fragment of red cell in malaria
12. Pathology (colloq.)
14. Propelled, as a boat
15. Protuberance
16. Bathe in liquid
18. Sebaceous cyst
19. Repasts
20. Electrical engineer
21. To be sick
23. Narcotic addict (slang)
25. Latin conjunction
26. Element having even-numbered valency
29. Root of Piper methysticum
31. A sexual reproduction
36. Floor covering
37. Voucher (slang)
38. Policeman (slang)
39. Natural source of chemical
40. South American
42. ——ocy, extreme mental deficiency
43. Metallic element
44. Middle (prefix)
45. To bind
46. Depressing to sexual appetite
52. In the matter of (two words)
53. Stationary
54. Duration tetany (abbr.)
56. Primitive plant
58. Desire
59. Cerium (sym.)
61. Carries away by force
63. Type of grain
66. Wall painting
68. Love
69. Pertaining to the bones (prefix)
71. The body, exclusive of limbs
72. Convened
73. Mourns, as at a wake
74. Metric unit

DOWN

1. Part of a church
2. Match
3. Consumed
4. Erbium (sym.)
5. At this instant
6. Female sheep
7. Bill of fare
8. Right ear (abbreviation)
9. Kind of snake
10. Unemployed
11. Defeat
13. Vital organ
15. Impulse carrier
17. Bone marrow
19. Intended
22. To be situated
24. Figure in early karyokinesis
26. Genitive of silver (Latin)
27. Article
28. Physicians
30. Pertaining to peritoneal fluid
31. First (prefix)
32. Rosolic acid
33. Butter used as base for ointments in India
34. Proprietary remedy containing stillingia, menispermum, etc.
35. Fate rapidly
40. Victim of Hansen's disease
41. In combustible residue
44. Female horses
47. Deduce
48. Old tuberculin
49. Twenty-four hours
50. Object
51. Cavity
54. Measure of weight
55. Domesticated
57. Facial feature
59. Arrived
60. Spirit
62. Cooking vessel
64. Devoured
65. Number

establishing

desired

eating patterns

Obedrin®

and the 60-10-70 Basic Diet

Correct medication is important in initiating control that leads to development of good eating habits, essential in maintaining normal weight.[1,2,3]

Obedrin contains:

- Methamphetamine for its anorexigenic and mood-lifting effects.
- Pentobarbital as a corrective for any excitation that might occur.
- Vitamins B_1 and B_2 plus niacin for diet supplementation.
- Ascorbic acid to aid in the mobilization of tissue fluids.

Obedrin contains no artificial bulk, so the hazards of impaction are avoided. The 60-10-70 Basic Diet provides for a balanced food intake, with sufficient protein and roughage.

Formula:

Semoxydrine HCl (Methamphetamine HCl) 5 mg.; Pentobarbital 20 mg.; Ascorbic acid 100 mg.; Thiamine HCl 0.5 mg.; Riboflavin 1 mg.; Niacin 5 mg.

1. Eisfelder, H. W.: Am. Pract. & Dig. Treat., 5:778 (Oct.) 1954.

2. Sebrell, W. H., Jr.: J.A.M.A., 152:42 (May) 1953.

3. Sherman, R. J., M.D.: Medical Times, 82:107 (Feb.) 1954.

Write for 60-10-70 Diet pads, Weight Charts, and samples of Obedrin.

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee

FOR SUPERIOR PERFORMANCE

FOR SUPERIOR PERFORMANCE

IN ANTIBIOTIC THERAPY

Polycycline—available in many dosage forms—affords significant clinical advantages in broad-spectrum antibiotic therapy:

EFFECTIVE IN BROAD RANGE
—against Gram-positive and Gram-negative organisms, certain rickettsiae and large viruses.

GREATER TOLERANCE
—markedly lower incidence and severity of adverse side effects.

GREATER SOLUBILITY
—than chlortetracycline, yielding quicker absorption and increased diffusion in body fluids and tissues.

GREATER STABILITY
—in solution than chlortetracycline or oxytetracycline, assuring higher, more sustained blood levels.

Polycycline is a tetracycline produced by the unique Bristol process of direct fermentation. Its basic structural formula is free of a chlorine atom (present in chlortetracycline), and of an hydroxyl group (present in oxytetracycline).

EFFECTIVE, SAFER, MORE SUSTAINED ACTION WITH THIS NEWEST BROAD-SPECTRUM ANTIBIOTIC

POLYCYCLINE
AQUEOUS '250' or '125'
An aqueous suspension ready to use without reconstitution. Stable for 18 months without refrigeration. Highly palatable, cherry flavor. As calcium tetracycline equivalent to 250 mg. (or 125 mg.) tetracycline HCl per 5 cc.; in bottles of 1 fl. oz.

POLYCYCLINE
SUSPENSION WITH TRIPLE SULFONAMIDES
Coconut oil suspension of tetracycline with three sulfonamides. In concentration of 125 mg. tetracycline HCl with 167 mg. each of sulfadiazine, sulfamerazine and sulfamethazine per 5 cc.; in bottles of 2 fl. oz.

POLYCYCLINE
SUSPENSION '250'
A really palatable oil suspension, requiring no dilution or reconstitution. Needs no refrigeration—stable for 18 months. In concentration of 250 mg. tetracycline HCl per 5 cc.; in bottles of 1 fl. oz.

POLYCYCLINE
CAPSULES
Handy form for oral use, in two potencies of tetracycline HCl. In capsules of 100 mg.; in bottles of 25 and 100. In capsules of 250 mg.; in bottles of 16 and 100.

POLYCYCLINE
INTRAMUSCULAR
For deep intramuscular injection. In single dose vials of 100 mg. tetracycline HCl per vial.

POLYCYCLINE
OINTMENT
WITH 2% XYLOCAINE*
—30 mg. tetracycline HCl with 20 mg. Lidocaine (as the base), per gram.

POLYCYCLINE
OPHTHALMIC OINTMENT
WITH 2% XYLOCAINE*
—10 mg. tetracycline HCl with 20 mg. Lidocaine (as the base), per gram.

*Reg. U.S. Pat. Off.

Bristol
LABORATORIES INC.
SYRACUSE, NEW YORK

POLYCYCLINE
AQUEOUS PEDIATRIC DROPS
As calcium tetracycline equivalent to 100 mg. tetracycline HCl per cc.; in bottles of 10 cc. with dropper calibrated at 25 mg. and 50 mg.

POLYCYCLINE
PEDIATRIC DROPS
For accurate dosage in small amounts. In concentration of 100 mg. tetracycline HCl per cc.; in bottles of 10 cc. with dropper calibrated for administration of 25 mg. or 50 mg.

When you think of tetracycline, think of

POLYCYCLINE

(Tetracycline HCl Bristol)

CLISTIN IN NASAL ALLERGIES . . . HAY FEVER . . . POLLEN SENSITIVITY

CLISTIN IN PERENNIAL RHINITIS . . . DUST ALLERGIES

CLISTIN IN DRUG REACTIONS . . . URTICARIA . . . PRURITUS

CLINICAL APPRAISALS OF A NEW ANTIHISTAMINIC
CLISTIN MALEATE

"87 per cent reported some relief of their symptoms following the administration of this antihistamine, and in 76 per cent the relief was graded as moderate to complete . . . Undesirable side effects associated with the administration of this antihistaminic agent were infrequent and usually mild in nature."[1]

"Carbinoxamine maleate has as potent antihistamine action and as low an incidence of side-effects as has any other previously employed histamine antagonist."[2]

"Clistin maleate is a potent antihistaminic drug with only weak sedative properties and should be a useful adjunct in the treatment of allergic conditions."[3]

CLISTIN® MALEATE

(Carbinoxamine Maleate, McNeil)

Dosage forms:

Tablets Clistin Maleate, 4 mg.

Tablets Clistin R-A (repeat action), 8 mg.

Elixir Clistin Maleate, 4 mg. per 5 cc.

Clistin Expectorant

Tablets Clistanal (Clistin Maleate, 2 mg. plus APC)

McNEIL

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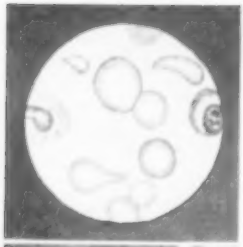
PHILADELPHIA 32, PENNSYLVANIA

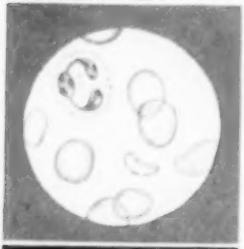
1. Johnson, H. J., Jr.: Clinical Evaluation of a New Antihistaminic: Clistin Maleate, Amer. Pract. & Digest. Treat. 5:862 (Nov.) 1954.

2. New and Nonofficial Remedies, 1955, to be published.

3. Beale, H. D., et al.: Clistin Maleate. A Clinical Appraisal of a New Antihistaminic, J. Allergy 25:521 (Nov.) 1954.

CLISTIN IN





MORE THAN A HEMATINIC

HEPTUNA PLUS will correct most common anemias, of course.

But as you know, anemia is usually only one manifestation of a complex deficiency picture. [1-3]

So to HEPTUNA PLUS' potent hematopoietic factors, we've added vitamins A and D, the complete B complex, and 10 important minerals.

Is it a refractory anemia case? Try HEPTUNA PLUS.

HEPTUNA® PLUS

EACH SOFT, SOLUBLE CAPSULE CONTAINS:

Ferrous Sulfate, Dried, U.S.P.*	199 mg
Vitamin B_{12}, U.S.P.	5 mcg
Folic Acid, U.S.P.	0.33 mg
Ascorbic Acid, U.S.P.	50 mg
Cobalt (from Cobaltous Sulfate)	0.1 mg
Copper (from Cupric Sulfate)	1 mg
Molybdenum (from Sodium Molybdate)	0.2 mg
Calcium (from Dicalcium Phosphate)	37 mg
Iodine (from Potassium Iodide)	0.05 mg
Manganese (from Manganous Sulfate)	0.033 mg
Magnesium (from Magnesium Sulfate)	2 mg
Phosphorus (from Dicalcium Phosphate)	29 mg
Potassium (from Potassium Sulfate)	1.7 mg
Zinc (from Zinc Sulfate)	0.4 mg
Vitamin A (Fish Liver Oil)	5,000 U.S.P. Units
Vitamin D (Tuna Liver Oil)	500 U.S.P. Units
Thiamine Hydrochloride, U.S.P.	2 mg
Riboflavin, U.S.P.	2 mg
Pyridoxine Hydrochloride, U.S.P.	0.1 mg
Niacinamide, U.S.P.	10 mg
Calcium Pantothenate	0.33 mg
Desiccated Liver N.F. (undefatted)	150 mg

*Equivalent to 4.5 gr. Ferrous Sulfate U.S.P.

1. Cecil, R.L., and Loeb, R.F.: A Textbook of Medicine. W. B. Saunders Co., Philadelphia, 1953, p. 1012. 2. McLester, J.S.: Nutrition and Diet in Health and Disease. W. B. Saunders & Co., Philadelphia, 1949, p. 636. 3. Ibid., p. 627.

DOSAGE: one to four capsules daily, after meals.

SUPPLIED: bottles of 30 and 100 soft, soluble capsules.

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LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

Impressed with MT

I had an opportunity to read a copy of MEDICAL TIMES which was in the possession of a friend of mine.

I was so impressed with the high educational quality of its contents that I was determined to write and ask if I may subscribe to the publication.

Please advise.

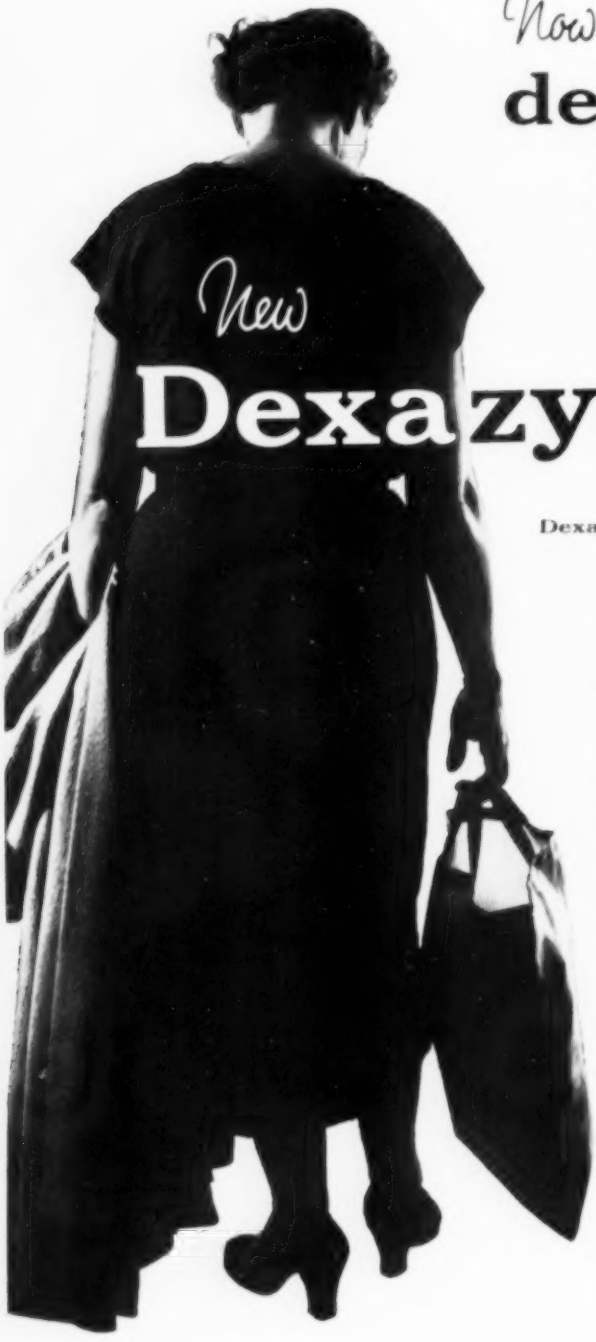
T. S., M.D.
West Newton, Massachusetts

One Criticism

Thank you very much for sending MEDICAL TIMES to me. I have read it avidly each month and look forward to receiving each issue. However, I have one criticism which I believe you will appreciate receiving. Please eliminate the abbreviations in the "Clinico-Pathological Conferences."

During the time of my internship and residency abbreviations were strictly prohibited and hence I, and others of the same vintage, have no idea as to what some of them mean. If it is not advisable to eliminate the abbreviations, please furnish a glossary at the end of the conference explaining them.

—Continued on page 50a



Now lift the burden of

depression

somatically

psychically

safely

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New Dexazyme

Dexazyme presents an important new concept to lift the patient out of depression — somatically, psychically and safely. Each Dexazyme tablet coordinates the mood and metabolic stimulating effects of:

d-Amphetamine sulfate, in reduced, safer dosage (3 mg.) — to elevate mood.

Pentrazol* (130 mg.)—to elevate mood as well as improve respiration, circulation, vascular tone, sleep pattern, mental attitude and outlook.

Niacin (50 mg.)—to enhance cerebral blood flow and oxygen supply; to facilitate nerve cell respiration; and to improve mood.

Thiamine (5 mg.), **Riboflavin** (2 mg.) and **Ascorbic Acid** (37.5 mg.) — to enhance enzymatic oxidations, improve carbohydrate metabolism, and maintain vascular tissue integrity.

Indications: neurotic depression, reactive depression, depression-produced hypochondriasis, depression of the aged, post-partum depression, post-operative and convalescent depressions, and depressions of the chronically ill.

Literature and trial supply sent on request to Gray Pharmaceutical Co., Inc., 50 Hunt St., Newton 58, Mass.

*

℞ **Dexazyme**

Sig: 1 (or 2) tablets t.i.d. (8, 12 and 3 o'clock). Bottles of 60.

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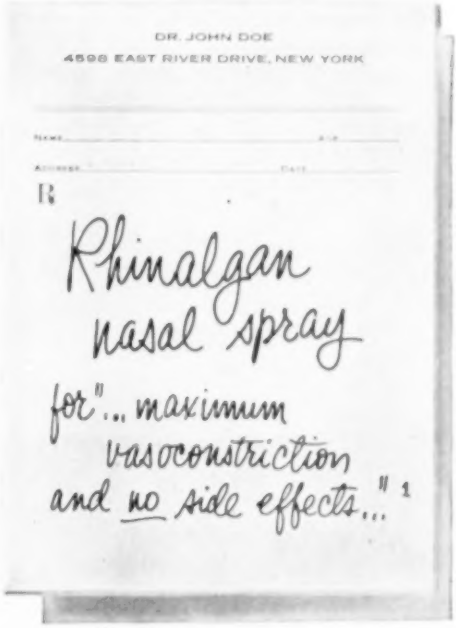

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NOT "JUST ANOTHER" DECONGESTANT!

Make it a habit to prescribe Rhinalgan Nasal Spray to prevent nasal congestion whenever you prescribe chlorpromazine or rauwolfia serpentina preparations. *J. N. Y. Phys., 11:11, 1950.*

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LETTERS TO THE EDITOR

—Continued from page 47a

On page 413 of the April issue of MEDICAL TIMES the abbreviation "PND" appears three times. What does it mean, please? I have asked several colleagues, consulted several dictionaries, and several record librarians. None of them enlighten me. Will you please do so?

Dr. Laucs' letter is one of several recently received on the same subject. The Editors wish to state very unhesitatingly that the criticism is most certainly well taken.

First, we would like to explain that "PND" means paroxysmal nocturnal dyspnea. We can readily understand how difficult it would be to interpret such abbreviations. The Editors will take immediate steps to eliminate abbreviations wherever possible; and wherever this is not possible, a glossary will be appended.

MEDICAL TIMES *is deeply appreciative of the interest of Dr. Laucs, Dr. Siegel, and the many other physicians who have written on this subject. We wish to thank all of you who have taken the time to write to us.*

The Editors

Refresher Reprints

Thank you very much indeed for the excellent reprint on Poliomyelitis. A timely presentation of reliable, valuable information.

A.H.M., M.D.
Weehawken, N. J.

More On Prescription Pad Holders

As a very satisfied and regular reader of your excellent magazine, I would like

to receive your prescription pad holder and wallet and I want to thank you again for sending me your wonderful refresher articles. Congratulations to you for your excellent work.

M.L.F., M.D.
Irvington, N. J.

I certainly have appreciated and enjoyed receiving your fine publication, MEDICAL TIMES, and find it a very helpful and interesting journal.

In your recent issue, I read about the combination wallet and prescription pad holder that had been sent out to part of the doctors on your circulation list. This certainly sounds like a most useful and practical article. Unless these holders were sent out only to a restricted list, I would be very happy to receive one and put it to good use. If any are still available, I shall take the liberty of thanking you in advance.

H.G.J., M.D.
Aliquippa, Pa.

A note to tell you I enjoy MEDICAL TIMES very much and feel that its contribution to general practice is invaluable. I especially enjoy the refresher articles.

I would appreciate your gift of a prescription pad holder.

O.A.F., M.D.
Kansas City, Kansas

The editors continue to be pleased by the dozens of letters received daily requesting one of the prescription pad holders which originally were sent out to a limited list to test reader reaction.

We will be glad to send holders to any physician on the MEDICAL TIMES *mailing list requesting one.*

a circulatory
and respiratory
stimulant . . .

Coramine®

ORAL SOLUTION (nikethamide CIBA)

Clinical experience over many years has shown that Coramine Oral Solution is useful as a circulatory and respiratory stimulant for asthenic or elderly patients. It has been reported that Coramine Oral Solution may be beneficial in patients with coronary occlusion, in whom it appears to improve collateral circulation in the infarcted area and to stimulate the respiratory center.[1] Being noncumulative and having low toxicity, Coramine Oral Solution is suitable for prolonged treatment without danger of habituation developing. *Dosage:* ½ to 1 teaspoonful (2 to 4 ml.) 2 or 3 times a day—diluted, if desired, with water.

SUPPLIED: Coramine Oral Solution, a 25% aqueous solution of nikethamide; bottles of 1 and 3 fluid oz. and 1 pint. Also for intravenous or intramuscular use: Ampuls, 1.5 ml. and 5 ml.; multiple-dose vials, 20 ml.

1. Carey, L. S.: Delaware M. J. 21: 229 (Oct.) 1949.

CIBA
SUMMIT, N. J.

MODERN MEDICINALS

These brief reviews of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Acidiron, Walker Laboratories, Inc., Mount Vernon, New York. Each green tablet contains: Ferrous sulfate, exsiccated—3 grains; hydrochloric acid, diluted—125 mg. For iron deficiency anemias in older patients with hypochlorhydria. **Dose:** One or 2 tablets followed with a glass of water after meals. **Sup:** In bottles of 100 tablets.

Arlidin Hydrochloride, Arlington-Funk Laboratories, Division of U. S. Vitamin Corp., New York 17, New York. Each tablet provides 6 mg. Nylidrin HCl (phenyl-1-butyl-norsuprifen HCl). Each cc. of parenteral solution provides 5 mg. Nylidrin HCl. Helps make life more comfortable for patients with peripheral vascular disease. Increases blood flow largely to muscles where it is most needed in claudication. Increases peripheral blood flow by increasing rather than decreasing cardiac blood flow and with little or no lowering of systolic blood pressure. **Dose: Orally,** 1 tablet 3 to 4 times a day or more as required (with an additional tablet at bedtime for night cramps). **Parenterally,** 0.5 cc. subcutaneously or intramuscularly to start; increasing gradually to 1 cc. one or more times daily as needed. **Sup:** Arlidin HCl Tablets 6 mg. (scored) in bottles of 50, 100, and 1,000. Arlidin HCl Parenteral, 5 mg. per 1 cc. ampul, boxes of 6, 25, and 100 ampuls.

Ascalyt, Thos. Leeming & Co., Inc., New York 17, New York. Active ingredients: Papain and Cysteine Hydrochloride. For treatment of roundworm and pinworm. Non-toxic, enzymatic. **Dose:** One day treatment—as determined by physician. **Sup:** In package of 3 envelopes.

Bromospaz, Chicago Pharmacal Co., Inc., Chicago, Illinois. Each tablet contains homatropine mbr., 5 mg., phenobarbital, 16.2 mg. Indicated as a g-i antispasmodic and sedative. **Dose:** Adult, 1 or 2 tablets b.i.d., preferably before meals. **Sup:** In bottles of 100 tablets.

Butiserpine Tablets, McNeil Laboratories, Inc., Philadelphia 32, Pennsylvania. Each scored tablet contains Butisol sodium 15 Mgm., (¼ grain), reserpine 0.1 Mgm. Indicated in the treatment of mild to moderate essential hypertension, coronary occlusion, angina pectoris, congestive heart failure, premenstrual tension and anxiety neurosis. **Dose:** Suggested dosage is 1 to 4 tablets daily. **Sup:** In bottles of 100 and 1,000 tablets.

Ceniron, The Central Pharmacal Company, Seymour, Indiana. Each tablet contains ferrous sulfate, exsiccated, 200 mg., ascorbic acid, 125 mg., manganous sulfate monohydrate, 12 mg., copper sulfate, 3 mg., cobalt chloride hexahydrate, 0.4 mg. For use in iron-deficiency anemias. **Dose:** As determined by physician. **Sup:** In bottles of 100, 500, and 1,000 tablets.

—Continued on page 58a

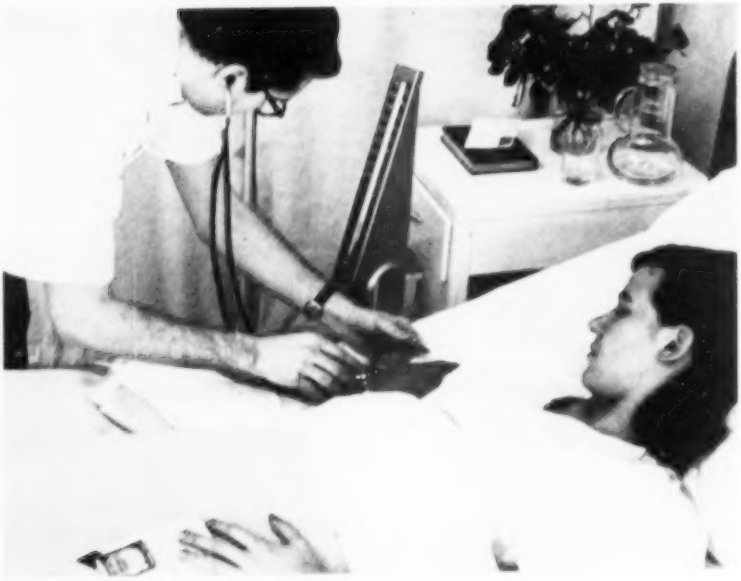
for the
epileptic...
greater
independence

Modern diagnostic methods and effective anticonvulsants now help the patient with epilepsy enjoy greater freedom from seizures. And with a more understanding society, greater independence is assured.

DILANTIN® SODIUM (diphenylhydantoin sodium, Parke-Davis)
an established anticonvulsant of choice, alone or in combination, for control of grand mal and psychomotor seizures — without the handicap of somnolence.

DILANTIN Sodium is supplied in a variety of forms -- including Kapseals® of 0.03 Gm. (½ gr.) and 0.1 Gm. (1½ gr.) in bottles of 100 and 1,000.

Parke, Davis & Company



Strict and consistent accuracy in the measurement of bloodpressure is difficult to achieve at best. If just one possibility for compounding error can be eliminated, why not?

The mercury displacement principle in sphygmomanometry excludes the possibility of functional error in the instrument itself. It does not depend on the elasticity of metal, which varies, or on moving parts, which wear. Its action is governed solely by gravity—the most constant and unequivocal force known. As such, it provides the standard against which other types of manometers must be calibrated and checked when their accuracy is in doubt.

The W. A. Baum Company has specialized in the manufacture of true mercury-gravity manometers—and nothing but true mercury-gravity manometers – since 1916. In so doing, we realize that precise accuracy in instrument function may not be as important in some cases as in others. But is there any good argument against it?

To be sure

Lifetime Baumanometer
STANDARD FOR BLOODPRESSURE

The Standby Model.

Other models: Kompak Model '300' Model Wall Model.

See them at your dealer's.

✳ MORE THAN 400 EGGS

. . . would be required to equal the 25 mg. thiamine content of a single capsule of "BEMINAL" FORTE with VITAMIN C, which also contains therapeutic amounts of other essential B factors and ascorbic acid as follows:

Thiamine mononitrate (B_1) ..... 25.0 mg.

equivalent to more than 400 eggs

Riboflavin (B_2) ..... 12.5 mg.

equivalent to at least 8 slices of liver

Nicotinamide ..... 100.0 mg.

equivalent to more than 10 loaves of bread

Pyridoxine HCl (B_6) ..... 1.0 mg.

equivalent to about 14 servings of spinach

Calc. pantothenate ..... 10.0 mg.

equivalent to almost 4 quarts of milk

Vitamin C (ascorbic acid) ..... 100.0 mg.

equivalent to more than 15 apples

"BEMINAL"® FORTE with VITAMIN C

Ayerst

Recommended whenever high B and C levels are required and particularly pre- and postoperatively. Suggested dosage: 1 to 3 capsules daily, or more as required.

No. 817—supplied in bottles of 100 and 1,000

542

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—Continued from page 53a

Cortril Vaginal Tablets, Chas. Pfizer & Co., Inc., Brooklyn 6, New York. Specially shaped tablets containing 10 mg. of Cortril (hydrocortisone) in a special carbo-wax base. To provide symptomatic relief in all types of vaginitis. Tablets are also a useful adjunct to the specific treatment of senile vaginitis and infections such as monilial and trichomonal vaginitis. **Dose:** One tablet is inserted once or twice daily until symptoms subside. Before treatment, area should be thoroughly cleansed. **Sup:** Individually wrapped in foil, five tablets to a strip, two strips to a carton.

Deltra Tablets, Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia 1, Pennsylvania. A synthetic analogue of cortisone, having similar but more potent anti-inflammatory therapeutic action. Chemically indicated in rheumatoid arthritis and has been used with benefit in bronchial asthma and various inflammatory skin diseases, including atopic dermatitis, contact dermatitis, urticaria and dermatitic herpetiformis. Each tablet contains 5 mg. of predmisone. **Dose:** Initial daily dose is 20-30 Mgm. Daily maintenance dose is 5-20 Mgm. **Sup:** In bottles of 30 and 100 tablets.

Falgos, American Ferment Co., Inc., New York 18, New York. Each tablet contains aspirin, 3 grn., acetophenetidin, 2 grn., caffeine, 1/3 grn., balanced proportion of aluminum hydroxide and magnesium hydroxide. Indications: pain from various causes, discomfort of the common cold; following dental work. **Dose:** One or 2 tablets with water, repeat q. 3 h, if necessary. **Sup:** In 15's and 40's.

Florinef-S, E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corp., New York 22, New York. Formulated for topical anti-inflammatory therapy plus antibacterial effect, Florinef-S is particularly useful in the treatment of dermatological conditions which respond to topical corticoid therapy but in which superimposed secondary infection plays a role. Each ml. of the lotion contains 2.5 mg. of neomycin and 0.25 mg. of gramicidin. Each gram of the ointment contains 2.5 mg. neomycin and 0.25 mg. gramicidin. Plastibase, the vehicle in the ointment, affords prompt, uniform, and thorough release of the active ingredients. In lotion or ointment form Florinef-S combines the anti-inflammatory and anti-pruritic action of Florinef (Squibb fludrocortisone acetate) with the broad anti-bacterial action of Spectrocin (Squibb neomycin-gramicidin). It is useful in the treatment of dermatitis, neurodermatitis, lichen simplex chronicus, eczema, anogenital pruritis, and sunburn. **Dose:** As determined by physician. **Sup:** Florinef-S Lotion is contained in 15 ml. plastic squeeze bottles and is available in Florinef concentrations of either 0.05% or 0.1%. Florinef-S Ointment is available in an 0.1% Florinef concentration in five gram and twenty gram tubes.

Mestinon Bromide, Hoffmann-La Roche, Inc., Nutley, 10, New Jersey. A long-acting, orally active cholinergic agent useful in relieving the muscular weakness of myasthenia gravis. Mestinon is an analog of neostigmine USP—a drug which has been the mainstay of therapy in myasthenia gravis for 20 years. Unlike neostigmine, it is relatively free from gastrointestinal stimulation and other muscarinic side effects. **Dose:** As determined by physician. **Sup:** 60 mg.

Continued on page 62a

invitation to asthma?

not necessarily . . .

Tedral, taken at the first sign of attack, often forestalls severe symptoms.

relief in minutes . . . Tedral brings symptomatic relief in a matter of minutes. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours . . . Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Tedral provides:

Theophylline	2 gr.
Ephedrine HCl	⅛ gr.
Phenobarbital	⅛ gr.

in boxes of 24, 120 and 1000 tablets

Tedral®

WARNER-CHILCOTT

in the treatment of DERMATITIS
around COLOSTOMIES, FISTULAS and
ANORECTAL IRRITATIONS
from fecal and
urinary incontinence

dramatic results!

Well documented!

Supplied in 1 oz. tubes
and 1 lb. jars

Dept. G. PHARMACEUTICAL DIVISION, HOMEMAKERS' PRODUCTS CORPORATION, 380 Second Avenue, New York 10, N. Y.

—Continued from page 56a

scored oral tablets, bottles of 100 and 500.

Meticortelone, Schering Corporation, Bloomfield, New Jersey. Presently available data support the effectiveness of Meticortelone in intractable asthma and certain dermatoses. It is presumed that Meticortelone will be effective in any clinical entity responding to cortisone or hydrocortisone. Active Constituent: Prednisolone, alpha¹-pregnadiene-11 beta 17 alpha, 21-triol-3, C.A.G. 20-dione. **Dose:** An average of 20 to 30 mg. (4 to 6 tablets) a day is gradually reduced by 2½ to 5 mg. until maintenance dosage of 5 to 20 mg., is reached. The total 24-hour dose should be divided into 4 parts administered after meals and at bedtime. **Sup:** 5 mg. half-scored, buff-colored tablets, bottles of 30 and 100.

Neo-Cortef Lotion, The Upjohn Company, Kalamazoo, Michigan. A new lotion with water-soluble base especially useful on exposed surfaces such as face and hands. Offers anti-inflammatory agent hydrocortisone, 1%; wide-range antibiotic, neomycin, 5 mg., methylparaben, 2 mg., and butyl-p-hydroxybenzoate, 3 mg. For treatment of various forms of allergic dermatitis and other inflammatory skin diseases. **Dose:** Topically, a small amount is gently rubbed into involved areas one to three times daily or as directed by physician. **Sup:** In 15 cc. and 30 cc. plastic spray bottles.

Theelin R-P, Parke, Davis & Co., Detroit, Michigan. A new form of Theelin which is used to attain relief from menopausal symptoms. The new preparation provides a means of admin-

—Continued on page 64a

for your tense peptic ulcer patients

new

ANTRENYL®-PHENOBARBITAL

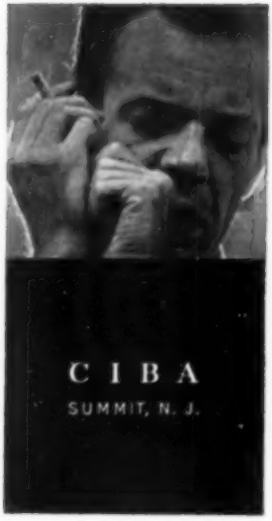
depresses... ...gastrointestinal motility

...gastric acid secretion

...nervousness and irritability so common in the ulcer diathesis

SUPPLIED: Antrenyl Phenobarbital Tablets (scored), each tablet containing 5 mg. Antrenyl and 15 mg. phenobarbital.

Other forms: Tablets, 5 mg. Syrup, 5 mg. per 4-ml. teaspoonful. Pediatric Drops, 1 mg. per drop.



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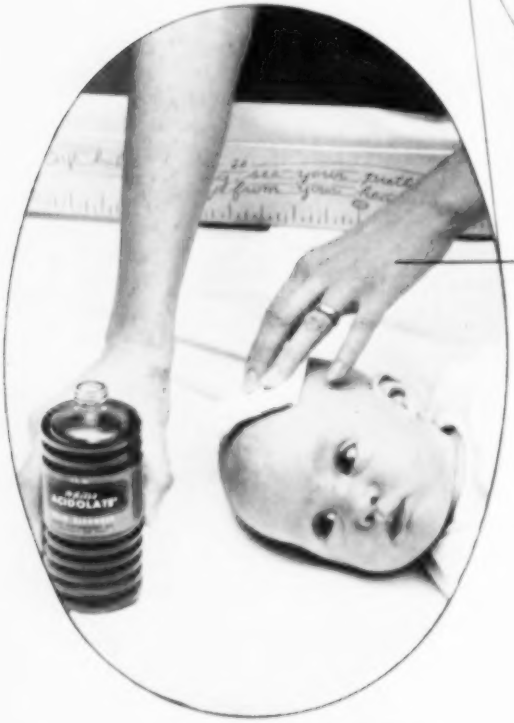
Designed FOR THE MOST DELICATE SKIN OF ALL...

DERMOLATE®

A remarkably mild, lathering skin detergent in cake form. It cleanses completely and is gentle for use on soap-irritable or acutely inflamed skin.
Dermolate is unsurpassed for routine daily bathing of infants and children.
. . . 4 oz. cakes . . .



ACIDOLATE®

A bland, non-lathering cleanser in *liquid form*, that removes fat-soluble and water-soluble skin soil with equal efficiency. Acidolate is especially useful in pediatrics to dissolve oils and ointments on the skin and hair or for the removal of scales, crusts, "cradle cap" and vernix caseosa.
. . . bottles of 8 fl. oz. and 1 gal. . . .

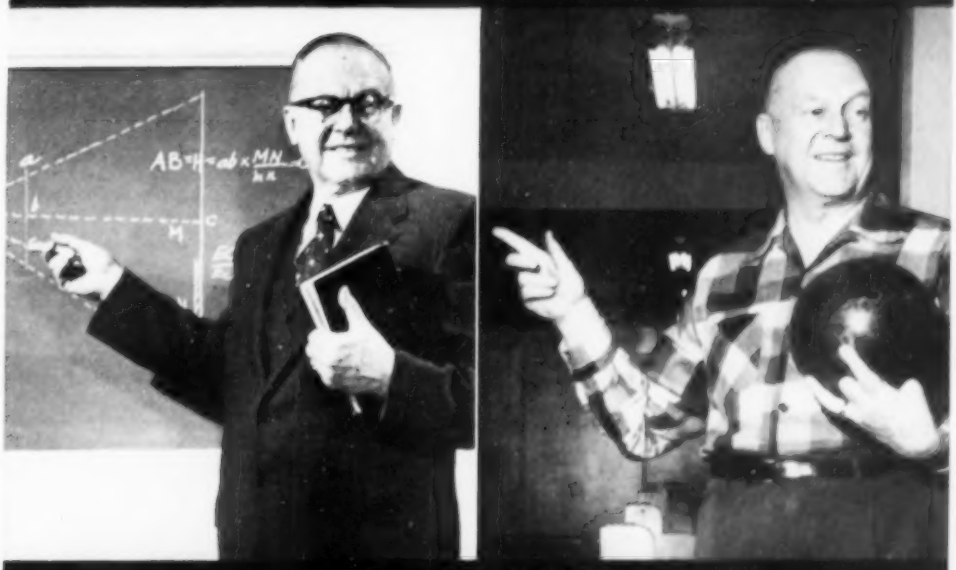
WHITE LABORATORIES, INC., Kenilworth, N. J.

Pyridium®

(PHENYLAZODIAMINOPYRIDINE HCl)

Gratifying relief from urogenital discomforts *in a matter of minutes*

KEY ADVANTAGES: Rapid-acting, nontoxic urinary analgesic. No systemic effects. Compatible with sulfonamides and antibiotics.



FOR COMFORT
ON THE JOB . . . AND AT PLAY

EFFECTIVE—In a study of 118 cases of pyelonephritis, cystitis, prostatitis and urethritis,[1] PYRIDIUM relieved or abolished dysuria in 95% of the patients and greatly reduced or abolished frequency in 85% of the cases.

NONTOXIC—PYRIDIUM produces rapid and entirely local analgesia of the urogenital mucosa. It may be administered in conjunction with sulfonamides or antibiotics to relieve distressing urogenital symptoms in the interval before the antibacterials can act.

PHYSIOLOGICAL—The soothing analgesic action of PYRIDIUM promotes relaxation of the sphincter mechanism of the bladder. This relaxation helps the patient to overcome urinary retention of spastic origin.

PSYCHOLOGICAL—PYRIDIUM imparts a characteristic orange-red color to the urine. This color-change gives patients added assurance of prompt action of the drug.

SUPPLIED: In 0.1 Gm. (1½ gr.) tablets, vials of 12 and bottles of 50, 500, and 1,000.

PYRIDIUM is the registered trade mark of Nepera Chemical Co., Inc. for its brand of phenylazo-diamino-pyridine HCl. Sharp & Dohme, Division of Merck & Co., Inc., sole distributor in the United States.

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PHILADELPHIA, PA.

DIVISION OF MERCK & CO., INC.

REFERENCE: 1. Erwin, T. J., Lowsley, O. S., and Menning, J.: Am. J. Surg. **62**: 339-345, December 1943.

—Concluded from page 62a

istering Theelin in both conjugated and nonconjugated forms for immediate and prolonged estrogenic therapy benefits. Designed for deep intramuscular administration, each cubic centimeter contains 2 mg. of Theelin and 1 mg. of Potassium Theelin sulfate in physiologic sodium chloride solution. Indicated in the treatment of patients in the menopause with its accompanying symptoms such as dizziness, emotional upsets and in other conditions responsive to estrogen therapy. **Dose:** Recommended dosage varies according to patient's response, but usually 0.25 cc. to 1 cc. given one or two times weekly is adequate. **Sup:** In 10 cc. steri. vials in packages of 1 and 10.

Wigraine, Organon, Inc., Orange, New Jersey. Wigraine offers total migraine headache therapy in each tablet by providing four ingredients specifically indicated for treating the outstanding features of the migraine syndrome—head pain, nausea and vomiting, and residual muscle pain. Each tablet contains 1 mg. of ergotamine tartrate and 100 mg. of caffeine, 0.1 mg. of belladonna alkaloids, levorotatory 87.5% hyoscyamine and 12.5% atropine as sulfates) and 130 mg. of acetophenetidin. **Dose:** Indicated for treatment of migraine headaches. Two Wigraine tablets should be taken at the first sign of a migraine attack, followed by 1 tablet every 20-30 minutes until the attack aborts. No more than 6 tablets should be taken per migraine attack, and no more than 12 tablets during a period of 1 week. **Sup:** In boxes of 20 foil stripped tablets.

"TENSION"
IS NOT ALL
YOU SEE . . .

. . . IN MOST
CASES OF
HYPERTENSION

keep the blood pressure down longer and the patient calm with

Veralba/R*

PROTOVERATRINES A AND B WITH RESERPINE

In mild, moderate, and severe hypertension, VERALBA/R usually maintains blood pressure at approximately normal levels indefinitely. It offers "combined" drug therapy that is both safe *and* effective. Establishing precise dosage is a simple process with VERALBA/R, and side effects are usually insignificant.

Supplied in bottles of 100 and 1,000 scored tablets, each containing 0.4 mg. of protoveratrines and 0.08 mg. of reserpine.

Standardized with mathematical accuracy . . . by chemical assay

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DIVISION OF ALLIED LABORATORIES, INC. INDIANAPOLIS, INDIANA

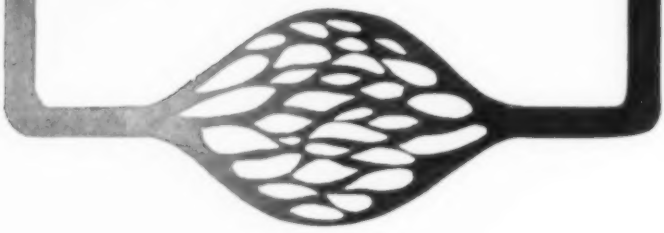
you can duplicate these results in control of bleeding . . .

Conclusions from a 1954 report on KOAGAMIN in the American Journal of Surgery

rapid	acts promptly – usually with 1 or 2 injections
safe	no untoward effects in over 11 years' use
prophylactically	facilitates surgical procedures tends to reduce blood loss
therapeutically	particularly valuable in general oozing fully compatible with vitamin K
saves blood	often obviates use of transfusions

Joseph, M.: Am. J. Surg. 87:905, 1954

KOAGAMIN® *parenteral hemostat*



KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.

Chatham

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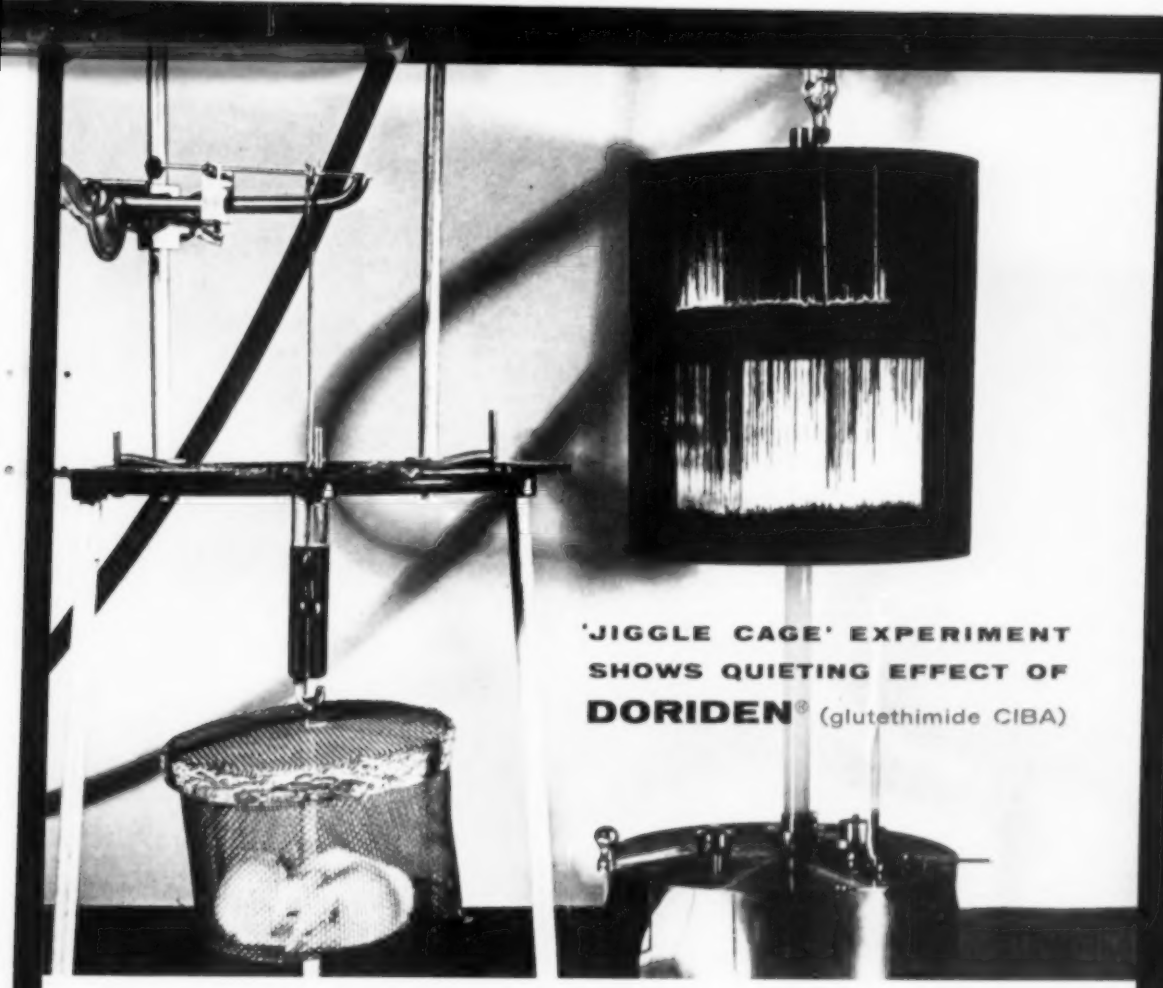
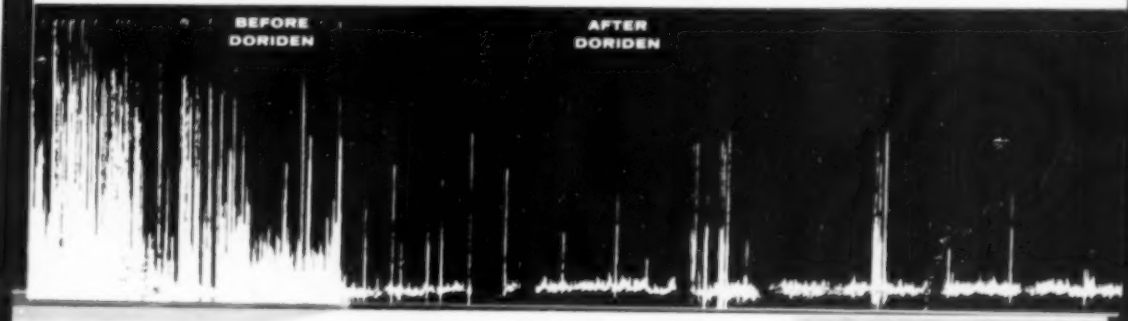


'JIGGLE CAGE' EXPERIMENT SHOWS QUIETING EFFECT OF DORIDEN® (glutethimide CIBA)

That **DORIDEN** — a totally new nonbarbiturate hypnotic and sedative — is effective as a quieting agent is demonstrated by this pneumatic movement recorder (jiggle cage), which measures the activity of laboratory animals. Note the marked change in the activity of mice after the administration of DORIDEN. Further evidence of the sedative and hypnotic effectiveness of DORIDEN is provided by numerous clinical studies. DORIDEN acts in 15 to 30 minutes and affords 4 to 8 hours of sound refreshing sleep. Present clinical evidence indicates it is not habit forming.

Tablets (white, scored), 0.25 and 0.5 Gm.

C I B A SUMMIT, N. J.



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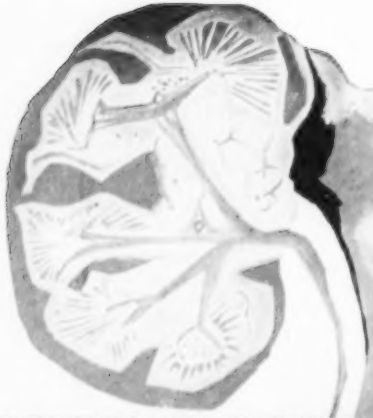

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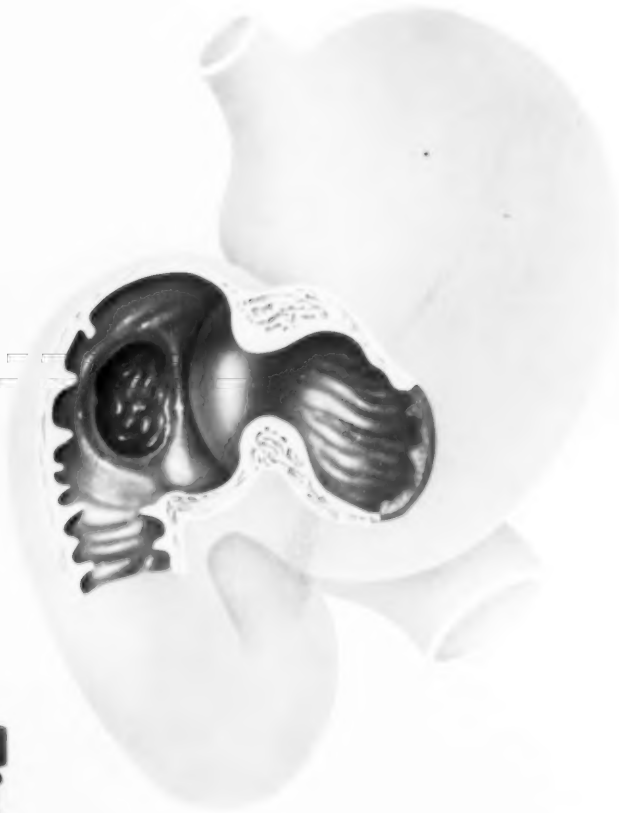

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Kaolin (90 gr.)	6.0	Gm.
Pectin (2 gr.)	130.0	mg.
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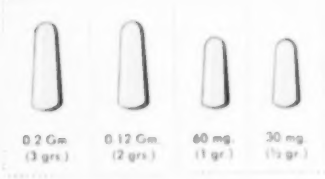

* Pentobarbital Sodium, Abbott

Indications for Treatment of Tuberculosis in Children

EDITH M. LINCOLN, M.D.
New York, New York

Before the advent of chemotherapy very few physicians were interested in the treatment of children with primary tuberculosis, since the vast majority of children recovered spontaneously often without ever showing symptoms. Moreover, there was no specific treatment to offer the unfortunate few who developed serious complications such as meningitis and miliary tuberculosis and promptly succumbed to their disease.

Now the pendulum of public opinion among physicians has swung far in the opposite direction and many physicians are treating all children with primary tuberculosis with specific antimicrobial therapy and many are suggesting the treatment of children with positive tuberculin tests as the only evidence of their disease.

Two facts must be faced by the conscientious physician.

1. We have as yet no anti-tuberculous agent which will *cure* the patient of his disease. We have powerful drugs which, if properly used, may achieve a degree of bacteriostasis which will allow the natural defenses of the body to control the tuberculous disease.

2. We have as yet no good diagnostic test for activity which will distinguish between the child whose positive tuberculin test denotes recently acquired and active disease and the child whose tuberculin test converted to positive many years before and whose infection has been arrested for years.

Even if we are not yet ready for the tremendous task of treating all children

From the Department of Pediatrics, New York University College of Medicine, and the Chest Clinic of the Children's Medical Service, Bellevue Hospital, New York, New York.

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with positive tuberculin tests there are definite indications for specific therapy of some complications of primary tuberculosis in children.

General Management of the Child with Active Tuberculosis Before proceeding to a discussion of specific treatment it is important to remember that no drug therapy eliminates the need for excellent general care and supervision to which every child with active tuberculosis is entitled regardless of the presence or absence of symptoms. A child with active primary tuberculosis does not need hospital or sanatorium care unless his home is inadequate. Activity should be restricted during the early months of the disease even if the child is afebrile. The child need not be kept in bed but his play must be supervised and play things selected to minimize activity. Children of school age who are past the acute stage of the disease and are afebrile may attend school if physical activities can be restricted. Diet should be liberal from the standpoint of calories; fat and protein content should be high and supplementary vitamins should be given. The child with active tuberculosis should be protected against excessive amounts of sunlight. Gamma globulin should be given promptly if a child with active tuberculosis is exposed to measles. Except in the event of exposure to smallpox or of an epidemic, vaccination against smallpox should be deferred until the tuberculous disease is inactive. The necessary duration of conservative therapy will vary with factors such as the extent of the tuberculous disease and the age of the child. Usually activity is increased after the disease is estimated to have existed for 6 months and in the average case restriction is not continued beyond a year when the major danger of complications is over.

Selection of Cases for Specific Treatment The selection of cases who need specific antimicrobial therapy in addition to conservative treatment is based largely on the estimated prognosis of each individual patient. It is obviously mandatory to treat children with forms of tuberculosis which had a high death rate before the advent of specific therapy. Meningitis and miliary tuberculosis must of course be treated. Experience at Bellevue Hospital in the prechemotherapy era disclosed two other main causes of deaths of children from primary tuberculosis:—(1) locally progressive primary pulmonary tuberculosis with cavitation and bronchogenic spread and (2) forms of hematogenous tuberculosis more protracted than miliary in which multiple foci of tuberculosis are found in various parts of the body. All such forms of tuberculosis must be treated as a life saving measure.

Many schemes of therapy have been reported and there is certainly no one method that is invariably successful. An outline of specific therapy in use in the Chest Clinic of the Children's Medical service is appended for those who may wish detailed outlines of treatment. The essentials for success are early diagnosis, prompt and vigorous treatment and prolonged therapy. Since the average duration of untreated meningitis was only 19½ days it is important in this complication to give the most effective antimicrobial agents, at present streptomycin and isoniazid, together and in maximum dosage. The dosage should be changed to a level less likely to cause toxic symptoms

when the patient seems to be definitely on the road to recovery. Many physicians treat miliary tuberculosis as intensively as meningitis because of the very high mortality rate in untreated cases. Excellent results have, however, been reported without the use of streptomycin.[1]

Except in meningitis and miliary tuberculosis it seems unnecessary to use both of the most effective antimicrobial agents except in patients with fulminating disease. Since tuberculosis is a chronic disease and arrest not cure is the most we can hope to achieve, it would seem wiser to reserve one potent anti-tuberculous agent for possible later use.

Isoniazid is usually to be preferred in the treatment of protracted hematogenous tuberculosis and locally progressive primary tuberculosis because of its minimal toxic side effects and ease of administration. Treatment should be continued for at least a year and until 3 to 6 months after signs and symptoms have disappeared and the disease is apparently under control. Control of cavitating primary tuberculosis is attained when cultures from gastric washings have been negative, x-rays stabilized, and cavities closed for a period of 6 months. If these objectives can not be reached resection of the residual disease should be considered while the child is still receiving antimicrobial therapy.

During the years 1930-1946 when no specific therapy was available the mortality rate among the children with primary tuberculosis seen at Bellevue Hospital was 21.5%. With specific therapy deaths have become uncommon and the rate in 1952-3 was only 1.5%.[2] The aim of therapy should not only be survival but survival in the best possible condition. In most of the serious complications of primary tuberculosis in which treatment is mandatory, prompt diagnosis and prolonged treatment result not only in a better survival rate but in less residual disease in the survivors.

In another group of complications, the use of specific therapy may be desirable not as a life saving measure but to alleviate symptoms, shorten the duration of illness or improve the end result. Therapy usually has a rapid beneficial effect on tuberculosis of the gastro-intestinal and genito-urinary tracts, relieving symptoms and often producing x-ray evidence of healing. Many forms of tuberculosis of the skin heal rapidly and draining cutaneous sinuses close promptly, thus permitting surgery of the underlying disease in bones or nodes. The potential danger of dissemination following surgery can be minimized by protecting the tuberculous patient with antimicrobial therapy during a surgical procedure and for a short time thereafter.

In still other complications of primary tuberculosis, such as disease of the bones or lymph nodes, it is difficult to evaluate the result of specific therapy because these complications tend to run a chronic course and may have periods of spontaneous remission even when no specific therapy is given. Attempts at specific therapy are always justified if only one major drug is employed and the drug selected is not given in maximum dosage.

Finally some complications show no visible or apparent response to specific therapy and therefore there is no clear indication for antimicrobial therapy. For example in endobronchial tubercu-

losis caused by the encroachment of caseous nodes on bronchi, neither the symptoms nor the bronchoscopic picture reveals a definite response to therapy.[5] In fact progression of the disease has been repeatedly observed while the patient is receiving treatment. In many cases the lesion will undoubtedly heal as well without specific therapy.

However in infants with severe symptoms or whenever bronchogenic dissemination seems likely, specific treatment may be advised to control the spread of the disease rather than to treat the local condition.

Outline of Specific Therapy*

Chest Clinic of the Children's Medical Service of Bellevue Hospital

TUBERCULOUS MENINGITIS

Streptomycin:	Intramuscular for 6 months	— 1.0 gm. daily for minimum period of 1 month or until CSF sugar has been normal for 1 week; thereafter b.i.w.
Isoniazid:	Oral for 6-12 months	— 10 mgm./K. daily for 4 to 6 weeks; thereafter 7 mgm./K.
Promizole:	Oral for 2 years	— 0.25 to 8.0 gms. daily.

MILIARY TUBERCULOSIS

Isoniazid:	Oral for 1 year	— 10 mgm./K. daily for 4 to 6 weeks; thereafter 7 mgm./K.
Promizole:	Oral for 2 years	— 0.25 to 8 gms. daily.
Streptomycin:	Intramuscular for 4 months	— 1.0 gm. daily; later b.i.w. In some cases streptomycin is omitted.

In other forms of tuberculosis which require therapy, isoniazid is given daily in doses of 5 mgm./K. with daily PAS or Promizole; or streptomycin is given daily or b.i.w. on weight basis combined with daily PAS or Promizole. Streptomycin and isoniazid are rarely given together, except as a lifesaving measure. Therapy is frequently prolonged for a year or more.

Dosage Schedule for Streptomycin (WEIGHT BASIS)

0.3 gm. — under 10 pounds
0.4 gm. — 10 through 19 pounds
0.5 gm. — 20 through 39 pounds
0.6 gm. — 40 through 59 pounds
0.75 gm. — 60 through 89 pounds
1.0 gm. — 90 pounds and over

Isoniazid:	Given by mouth every 12 hours. In case of vomiting, same amount may be given intramuscularly.
Promizole:	Given by mouth every 6 hours. In absence of signs of toxicity a gradual step-like increase from 0.5 gm. is made every few days until a blood level of from 1-3 mg.% is obtained (taken 2½-3 hours after last dose of Promizole).
PAS:	Para-aminosalicylic acid. Given by mouth every 4 hours for 3 or 4 daily doses, 0.5 gm./K./24 hours up to maximum of 12 gms. daily dose.
Streptomycin:	A 1.0 gm. daily dose is sometimes divided in two for comfort of the patient. Smaller doses are given as single daily injections except in small or emaciated patients.

* Subject to modification for individual cases.

Treatment of Asymptomatic Primary Tuberculosis It is generally recognized that most children with primary tuberculosis recover spontaneously without ever showing symptoms of illness. But there is always the possibility of the development of a serious complication such as meningitis especially in the early months of the disease. Therefore many physicians advocate the routine use of specific therapy in every child with x-ray evidence of primary tuberculosis.[4]

No antimicrobial agent has demonstrated an obvious effect on the resolution of primary pulmonary tuberculosis. The object of treatment would therefore be to prevent complications. Streptomycin is not adequate for this purpose as was repeatedly demonstrated by the development of meningitis in patients under treatment for miliary tuberculosis. There is evidence that clinical meningitis does not develop in children who are receiving adequate treatment with isoniazid. However cases of meningitis are known which developed within a month after isoniazid treatment was discontinued in patients who had received therapy for 4 months or less. Studies of carefully controlled series of children with primary tuberculosis, in which the patients to be treated are selected at random, are needed to prove the effectiveness of isoniazid in the prevention of meningitis as well as the proper dosage and required duration of therapy. Such studies are now in progress in 21 pediatric centres under the auspices of the United States Public Health Service. Until the results of this study are known it would seem wise to withhold therapy from children who can be kept under close observation. If in the opinion of the physician it is desirable to treat a child with asymptomatic primary tuberculosis with isoniazid, 5 mg. per kilogram of weight should be given daily for a year alone or combined with PAS or Promizole.

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660 Park Avenue

Peptic Ulcer

This summarization attempts to cover the essential information on the subject, including therapy, and is designed as a time-saving refresher for the busy practitioner.

Peptic ulcer has been found in man throughout the Ages and in all ages. It is present in men, women and children—from infancy to senility. It is found in all climes, all colors, all creeds. It is of interest and concern to the internist and surgeon, the pediatrician, and geriatrist, the roentgenologist, pathologist, research worker and general practitioner.

Etiology and Pathogenesis In the pathogenesis of ulcer, there are two groups of factors involved—the exciting and the predisposing causes. The exciting causes are 1. excessive acid medium; 2. impaired motility of the intestinal tract; 3. changes in the tissue resistance.

It is well accepted that the peptic ulcers do not appear except in an acid medium. It has also been proven that hydrochloric acid alone is not capable of producing an ulcer. To activate the acid, there is needed pepsin or a pepsin-like substance. Through some impairment of motility, the acid is either allowed to remain in prolonged contact with the mucosa, or is siphoned on to the mucosa in a concentrated stream. The normal intestinal mucosa is resistant to the acid. This resistance varies in different segments of the intestinal tract—it is greatest in the fundus of the stomach, decreases downward, and is least in the ileum. Due to alterations in the body mechanism, vascular changes may be produced in the mucosa which predispose to ulcer formation. Such changes may be brought on by acute or chronic infections. They may be the result of emboli producing an endarteritis or the result of a vascular constriction from other causes producing an ischemia of the mucosa. In addition, the trauma of repeated vomiting in protracted intestinal upsets, or the continuous ingestion of excessive roughage may alter the mucosal resistance, as may improper or inadequate diet.

It is readily seen from this brief summary, that no one of these factors or combination thereof can account for all the ulcers. There must then be some additional factor. This we find in the group of predisposing causes. These are the constitutional, emotional, secretory and hormonal characteristics which go to make up each individual. These characteristics, it is true, may be found in individuals without ulcer, or those with ulcer may not have them.

The constitutional or physical make-up is of least value in diagnosis. Attempts have been made to classify ulcer patients on an anthropological basis

but they are in no sense conclusive.

The emotional make-up does seem to form a pattern. These patients are often tense and high strung, but outwardly calm. They are usually alert, attentive and keen. They are over ambitious and are persistent in their activities and the pursuit of their objectives. Under this constant driving force, they are forgetful of themselves and are prone to assume added burdens and responsibilities. This may all be an attempt to compensate for a sense of personal inadequacy.

The secretory mechanism of people with ulcers may be abnormally sensitive. Thus, in response to any undue stimulus, there is generated an excessively rapid or over production of acid.

For some time it has been thought that the hormones play an important role in the etiology of ulcer. Recent studies have pointed to a possible neuroendocrine mechanism operating through the hypothalamus, pituitary, adrenal and gonads. It has also been shown[1] that the chronic administration of Acth and Cortisone produces an increase in uropepsin, gastric acidity and gastric pepsin through the adrenal glands independent of the gastric antrum or vagus nerve. Thus we may surmise that emotional and physical stress may stimulate the stomach to secrete increased acid and pepsin by a similar mechanism.

In summary we can say that peptic ulcer is not traceable to any one etiologic factor. It is the result of a combination of factors which must be present in certain individuals at certain times. At such times, in response to stimuli (be they of physical, chemical, biological, or neurogenic origin) there develops a disproportion between the resistance of the intestinal mucosa and the acid-pepsin juices, associated with a disturbance of intestinal motility, which permits the formation of a peptic ulcer.

Diagnosis The diagnosis is usually made from the history and x-ray studies. Laboratory findings and physical examination may be of some aid.

In obtaining the history, it is not sufficient to inquire merely into the present complaint. For successful diagnosis and treatment one should have a complete background of family and personal history, and an estimate should be made of emotional, environmental and other possible contributing factors.

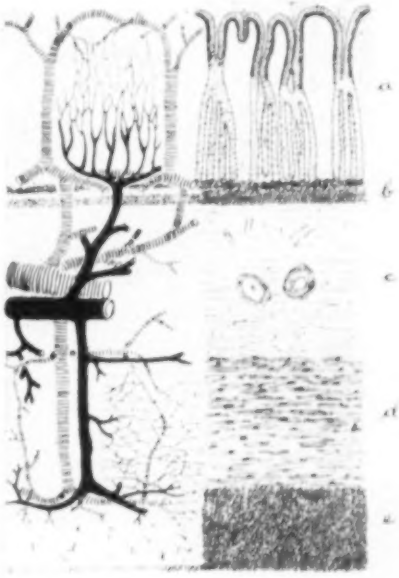

Fig. 1. Distribution of blood vessels in relation to layers of the stomach. **a.** mucous membrane; **b.** muscularis mucosae; **c.** submucosa; **d.** inner (circular) muscle layer; **e.** outer (longitudinal) muscle layer.

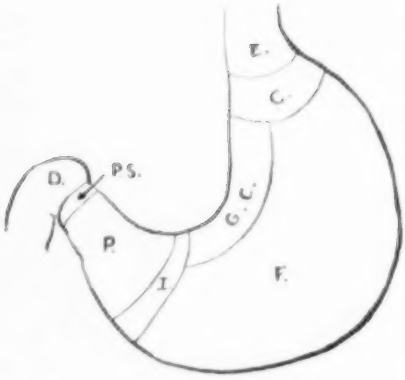

Fig. 2. Zones of the gastric mucosa. **D.** duodenum; **P.S.** pyloric sphincter; **P.** pyloric mucosa; **I.** intermediate zone mucosa; **F.** fundic mucosa; **G.C.** gastric canal mucosa (lesser curvature); **C.** cardiac mucosa; **E.** esophagus.

Pain is most often the predominant symptom—pain which, as a rule, bears some relationship to food and alkalies. The pain of uncomplicated duodenal ulcer usually occurs three to four hours after meals and is relieved by food or alkalies; it runs in cycles of varying intensity and duration; and is localized to the epigastrium with a radiation to the right of and above the umbilicus; one marked characteristic is the frequency of night pain between one and three A.M. In contrast is the pain of uncomplicated gastric ulcer in which the onset is usually one-half to two hours after meals; it is not relieved by food, but may be by alkalis; the cycle here is food, pain, comfort without food; the pain is also localized to the epigastrium with a more likely shift to the left of the umbilicus; the pain occurs during the night.

Nausea and vomiting accompany pain in varying degrees. In duodenal ulcer they may be present, but are more common in gastric ulcer in which they occur at the height of the pain and give immediate relief.

Bleeding by mouth or rectum is not always indicative of an ulcer. It may or may not be associated with a previous history suggesting ulcer.

Physical examination is important in that it gives a complete survey of the patient's general condition and may point to some contributing factors. The one definite point of value is point tenderness.

Laboratory findings are also of some limited help. The extent of hyperchlorhydria is important both for an original diagnosis and as a measure of progress in duodenal and jejunal ulcers. In gastric lesions it aids in a differential diagnosis of malignancy. The presence of occult blood in the stool also aids in differentiating a benign from a malignant lesion. Blood counts are helpful in determining the rate and quantity of blood loss in hemorrhage; and in differentiating blood dyscrasias.

Cytological study of the gastric contents is still in its infancy, and at present is not of great value in the hands of the general practitioner. The only accurate diagnostic procedure in this line would be biopsy.

X-ray then remains our most accurate and consistent diagnostic means. Such studies should be made only by a well equipped and thoroughly trained radiologist. It is not in the province of this paper to discuss the techniques to be followed in x-ray diagnosis. It is sufficient to state that adequate x-ray study should include fluoroscopic examination prior to the ingestion of barium; further study during and after swallowing of barium; and pressure

palpation of the abdomen during examination. It should also include manipulation and rotation of the patient in standing, supine and prone positions. Adequate films should be taken to insure complete study of the G.I. tract. Such study should show the location of the lesion, size and depth of the crater, and the amount of induration present.

Esophagoscopy and gastroscopy have their place in diagnosis and in proper hands are of great value when combined with x-ray studies. They are particularly useful in ruling out cancer, or in allowing for a trial period of medical care in suspected malignancy.

Different diagnosis should include gastritis, duodenitis, hiatus hernia, diverticula, cholecystitis, cancer, hepatitis, pancreatitis; acute and chronic disease of the heart, lungs, and kidney.

Treatment For many years there has been a good deal of controversy between adherents to the medical and surgical approaches in the therapy of peptic ulcer. Gradually the smoke of battle is clearing away. It appears to be the consensus that uncomplicated peptic ulcer is a medical problem. Surgery is reserved only for the complications.

The purpose of medical therapy is to provide constant neutralization of the continuously secreted acid, and protection of the intestinal mucosa. For this both drugs and diet are advised.

The antacids used are numerous, and may be employed singly or in combination. Among these are aluminum hydroxide gel[2] and tablets,[3] magnesium trisilicate,[4] combinations of these two,[5] calcium carbonate, aluminum phosphate gel,[6] and tribasic calcium phosphate. They provide symptomatic relief by acting locally on the gastric contents. They do not alter the function of the acid secreting cells, and their effect is only temporary. As a result they must be used often enough and in large enough doses to provide constant and complete neutralization. This may require their administration every hour in the early stages; reducing the dos-

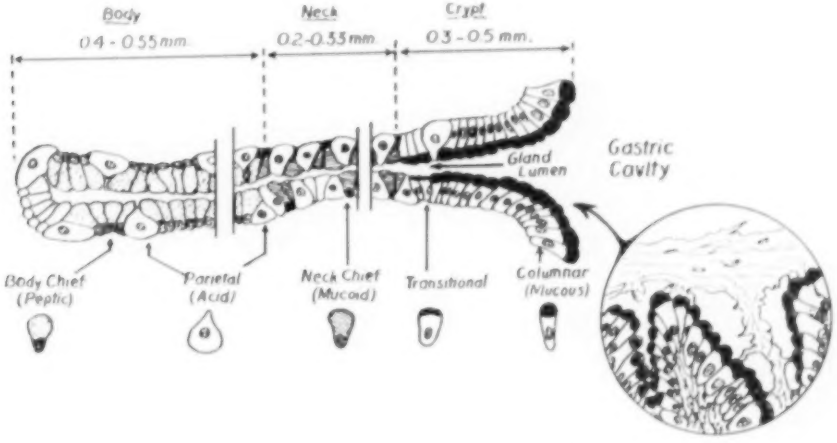

Fig. 3. Distribution of cell types in gastric gland tubule. Insert mucus film covering surface of stomach and its connection with the mucous cells. (after Hollander)

age to every two to three hours in later stages; with a further reduction between meals and at bedtime. Although powders are more effective than tablets, the latter may be used for convenience. Magnesium hydroxide is sometimes added to aluminum hydroxide gel[8] to counteract the constipating effect of the aluminum hydroxide, while the addition of homatropine methylbromide[9] exerts a spasmolytic effect.

Dihydroxy aluminum aminoacetate[7] has been found to possess efficient antacid and demulcent activity. The addition of a barbiturate and a drug of the belladonna class[10] to this compound is sometimes desired. Sodium carboxymethyl-cellulose[11] is an antacid exerting an action similar to that of mucin, which can be combined with an antispasmodic.[12] Gastric mucin itself, with various antacids,[13] may also be prescribed. A multiplicity of combinations of time honored antacids, either alone[14] or in combination with the belladonna-type drugs[15] and a barbiturate[16] are available commercially. Sometimes a synthetic-type antispasmodic[17] may be included in place of belladonna.

The antisecretory drugs reduce the volume of gastric secretion and the output of acid. The older drugs used were atropine or belladonna preparations. These belladonna alkaloids[18] are still available, and are often combined with a sedative[19] and vitamins.[20] The side effects as well as the activity of the belladonna group can be reduced by "quaternizing" the drug. Quaternizing produces compounds possessing a greater spasmolytic effect than anti-secretory action. Examples of this type are homatropine methylbromide[21] (HMB) and atropine methylnitrate[22] (AMN). Both

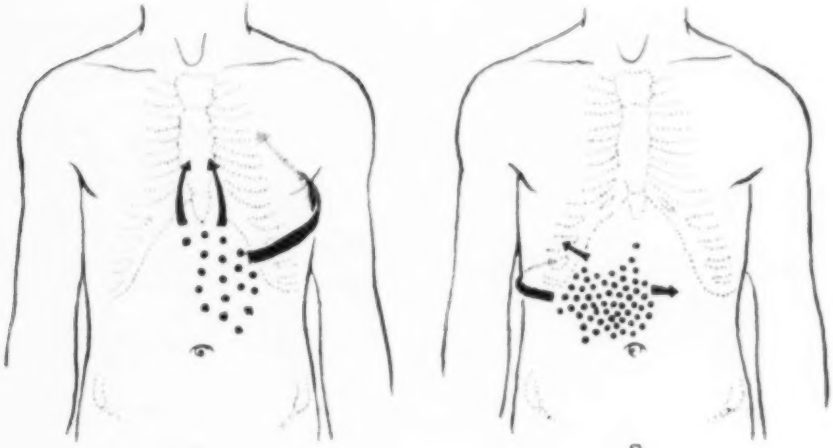

Fig. 4. Indication of pain by patients. Dots indicate the points of maximal pain. Arrows indicate regions to which the pain was projected.
A. Nonperforating gastric ulcers ½ to 2 hours after meals.
B. Nonperforating duodenal ulcers 3 to 4 hours after meals. (after Ivey, Grossman, Bachrach)

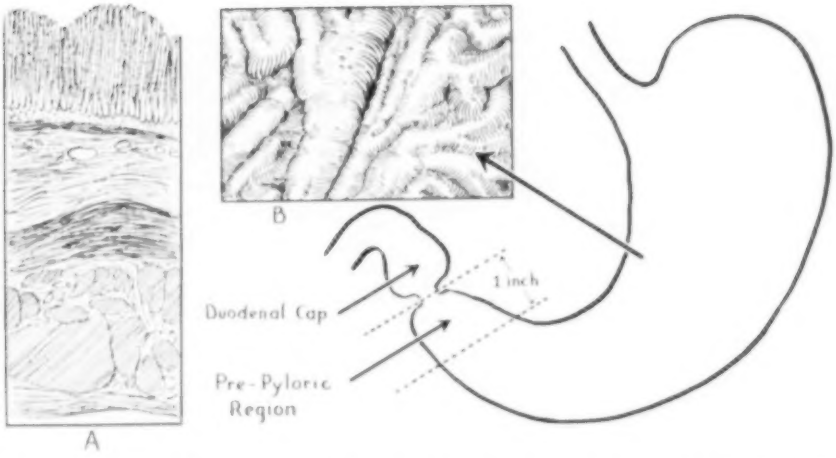

Fig. 5. Diagram of stomach and first portion of the duodenum. The arrows show the common locations of peptic ulceration. The prepyloric region is defined as the terminal inch of the stomach—not including the pylorus itself.
A. Vertical section of the normal wall of the stomach.
B. Mucous membrane constricted showing the rugae.

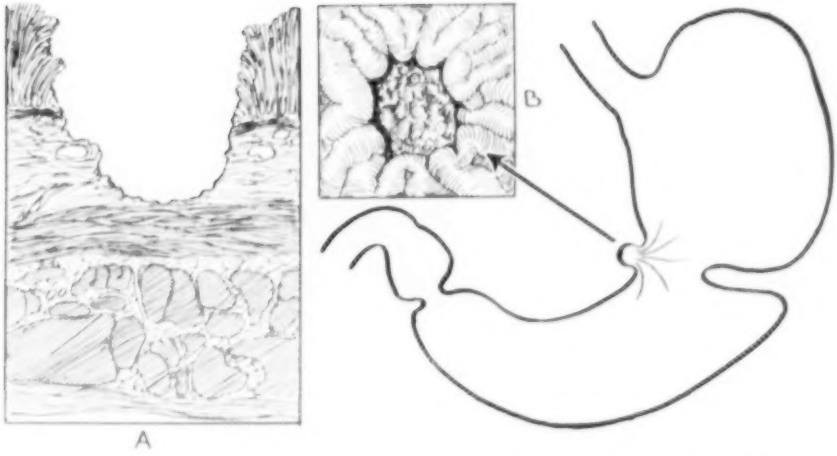

Fig. 6. Diagrammatic representation of the classic features of benign gastric ulcer. The crater protrudes out from the gastric lumen. The zone of induration about it is abruptly demarcated. Puckered rugous folds extend right up to the crater. An incisura may be present on the opposite gastric wall.
A. Vertical section of the stomach wall showing the extent of ulcer invasion.
B. Mucous surface showing rugae radiating from ulcer crater.

HMB[23] and AMN[24] are available with barbiturates. Side effects of parasympathetic inhibition, such as dryness of the mouth, blurred vision, tachycardia, palpitation, are not uncommon if these are used in amounts sufficient to inhibit acid secretion satisfactorily. Possibly their chief advantage is a delay in emptying time of the stomach, thus allowing for longer action of the antacids. Among the newer drugs are the so-called anticholinergic drugs.[25] By and large they appear to offer more rapid relief of pain, especially when given intramuscularly, than do the older drugs. The reasons for this are not clear. Combination with a barbiturate[26] provides increased relaxation. They delay gastric emptying time and decrease acidity, at times to the point of anacidity, especially when given parenterally. When used orally, they do not produce much reduction in acidity, and it is therefore possible that the cessation of pain might be explained by the lessened motor activity. They too have side-effects similar to the atropine-belladonna series; but these, as a rule, disappear with continued use. They vary with different proprietary preparations. They are contraindicated in pyloric obstruction, incipient glaucoma, prostatic hypertrophy, cardiac failure and cardiospasm.

Synthetic antispasmodics[27] are valuable in relieving smooth muscle spasm of the gastro-intestinal tract, and the addition of barbiturates[28] will further enhance their action. A recent new antispasmodic, Dibutoline Sulfate,[29] has been found useful and effective when used parenterally.

An extract of pregnancy urine[30] has been used with varying success in the treatment of crateriform peptic ulcer.

The anion exchange resins[31] have proven of some value. These act as adsorbents which effect an ion exchange and thus quickly produce a neutralization of the gastric acidity. There are apparently very few side reactions from these preparations, and there does not appear to be any acid rebound.

Other antisecretory drugs have been tried, but have proven ineffectual. The antihistaminic drugs do not lower gastric acidity sufficiently to be of value. Concentrates of enterogastrone, at present available, do not lessen gastric acidity consistently and do not prevent recurrences. Likewise, the various glandular or hormonal preparations are not effective in peptic ulcers. Nor have the enzyme inhibitors proven to be of much value.

Sedatives, either barbiturate[32] or non-barbiturate,[33] have a place in the management of ulcers. Whether they have a direct effect on the gastric activity itself is doubtful. But they do definitely have a quieting affect on the patient, and help to lesson the tension and stress which seem to play such a large role in the ulcer story.

We must remember that these drugs are only adjuncts to the program. To depend on them alone, is to pave the way for disaster. Obstruction, hemorrhage, perforation do occur during their use. By hiding some of the forewarning symptoms of these complications, they give a false sense of security. They must be used with care and with careful follow-ups of all patients. As yet, the ideal drug has not been found which will control gastric secretory activity over long enough periods of time, with no side effects and without danger of complications.

One further form of treatment for re-

duction of acidity should be mentioned. This has been carried out by several investigators. Ricketts, Palmer, Kirsner, and Hamann[5, 6] have reported excellent results with this type of therapy. The inhibitor effect of irradiation on gastric secretion depends upon the destruction of parietal cells. Anacidity develops after adequate exposure which consists of approximately 1600 to 2000 roentgen units in divided application to the fundus and body of the stomach. Complete healing of the ulcer occurs and it remains healed as long as the anacidity remains. This secretory inhibition is variable and temporary, but the procedure does appear to have some merit. It appears worthwhile as a further adjunct to the time-proven methods of treatment.

Diet has always been an integral part of ulcer management. The original Sippy diet has a definite place in the acute stage of ulcer management, but a prolonged use of such diet is impractical. Since ulcer diets are likely to be deficient in certain accessory food substances, it usually is advisable to prescribe multivitamin capsules[10] once or twice a day.

For patients depleted of proteins, an intensive course of protein hydrolysate may be advisable. There are several useful oral preparations available either in powder form[11] or in liquids containing protein hydrolysates.[12] Some products contain protein hydrolysates with carbohydrates, vitamins and/or minerals,[13] or with intact protein, vitamins and/or minerals.[14] Protein containing

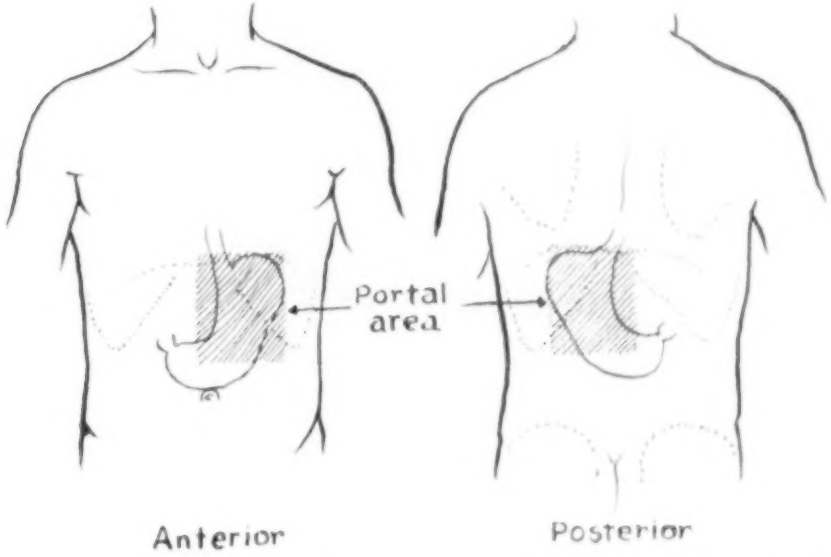

Fig. 7. X-ray irradiation of the fundus and corpus of the stomach in the treatment of peptic ulcer in man, for the purpose of inhibiting gastric secretion. Shaded areas show approximate portals used in anterior and posterior radiation of the fundus and corpus of the stomach. (after Ricketts, Palmer, Kirsner and Hamann)

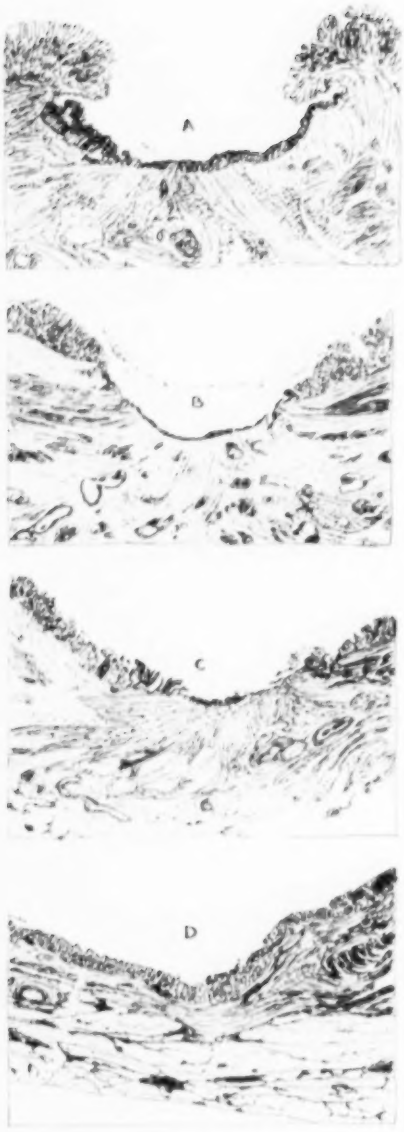

Fig. 8. Stages of healing in chronic gastric ulcer. A. Ulcer with undermined margins; B. Early stage of healing; C. Later stage of healing; D. Well healed ulcer.

dietry supplements[4] may be desired. At times it may only be necessary to prescribe a digestant containing proteolytic enzymes,[5] so that diet-protein may be utilized. When the hydrolysate is not tolerated orally or when protein depletion is particularly severe, amino acids may be administered parenterally as protein hydrolysates.[6]

The customary bland diet, if made attractive and appealing, is normally quite satisfactory for prolonged use, at least for a period long enough for the ulcer to heal. On such a diet, coarse foods, condiments, irritating foods are to be avoided. Many people do not know what foods are included in these categories and must be given specific directions. It is not sufficient to give a diet list and say follow it. But an explanation of why various specific items are omitted will make sense. The necessity for in between feedings must also be explained. Patients can readily understand that food helps to neutralize, or at least utilize, the acid and thus ease their pain. Possibly the idea that food may act as a coating over the ulcer will impress them. The important point is to see that sufficient amounts of proper foods, taken at frequent enough intervals, are used so as to prevent pain and allow for repair of the damaged tissues. Meal time must be pleasant so as to remove the added insult of stress and worry.

Tobacco and alcohol are contraindicated. They are both stimulants to the production of acid and cause increased peristalsis. Certainly during the acute phases they should be omitted. Some physicians flatly refuse to treat ulcer patients who will not forego these pleasures. Others allow them in moderation during interval stages. The de-

cision frequently rests on the physician's and patient's personal habits.

The maintenance of good general health is necessary to a successful course of therapy. The elimination of foci of infection, the early treatment of intercurrent disease, the maintenance of peace of mind all help to reduce the number of recurrences in ulcer patients. It has been shown in recent years that continued use of ACTH or cortisone may activate a quiescent ulcer. Therefore all ulcer patients should be warned of the possible danger from the use of these potent drugs. It may well become routine for them to carry identification cards just as do diabetics.

Psychotherapy has an important role in therapy. Formal, prolonged psychoanalysis or psychotherapy is not a necessity in most cases. But a careful perusal of the patient's emotional and environmental complexities is a necessity. For the physician to know the many details, often apparently trivial, which may act as triggers in setting off an ulcer is a must. To be able to help interpret these manifestations for the patient will often prove the key to a successful course of treatment.

The simple explanation that an ulcer is a sore, that it is aggrevated and kept active by the acid from the stomach is understandable to the patient. The knowledge that worry, fatigue, aggravation, annoyance, anger and all the many other emotions may well increase this acid makes further sense. He will then be able to understand that he must learn to live with his ulcer, that he can live with it and that he can be happy in spite of it.

Mention should be made of the fact that electroshock therapy has been used. Corbella and Piredda[47] treated peptic ulcer with electroconvulsive therapy and found that after one or two series of three to seven electrically induced convulsions in patients with hyperacidity and hypersecretion there was a quieting of symptoms. They concluded that even if these results were only temporary, the improvement in general condition was sufficient to facilitate surgery.

To sum up, medical management consists of drug therapy and proper diet, the maintenance of good general health, and the attainment of a state of mind which allows one to lead "the good life."

Ulcers of Other Regions of the G.I. Tract Throughout this discussion we have been considering duodenal and gastric ulcers, as they are the most frequent types of ulcer, and the basic facts here are common to all peptic ulcers. However, a few remarks about ulcers of other regions of the intestinal tract would not be amiss.

Acute esophageal ulcer is characterized by pain high in the epigastric region which is relieved by food or alkalies. Associated with this is the regurgitation of food, especially when the patient is recumbent.

Chronic esophageal ulcer is characterized by dysphagia and subxyphoid distress also relieved by food and alkalies.

The diagnosis is suggested by the history. Rarely is an esophageal ulcer found on x-ray. Failure to find a gastric ulcer, together with the history, should make one suspicious of the true lesion. Esophagoscopy proves the diagnosis. The complications are hemorrhage, which usually is mild and heals spontaneously; perforation is rare. Treatment consists of cauterization of

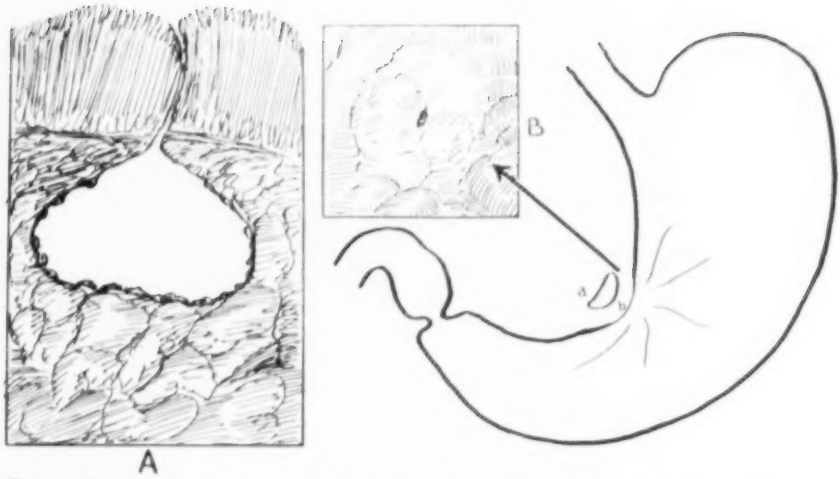

Fig. 9. Diagrammatic representation of the classic features of malignant gastric ulcer. The crater **(a)** does not protrude from the gastric lumen but is actually ulceration in a tumor mass which is growing into the gastric lumen. The indurated area is not well demarcated and may make a "meniscus" **(b)** around the crater. Puckered rugal folds extend only to the area of tumor, not to the crater.

A. Vertical section showing crater in tumor mass.

B. Mucous surface showing area of tumor with opening to crater.

the ulcer and routine care for acute ulcers; chronic ones may require surgery.

Channel ulcer occurs in that portion of the stomach between the antrum and duodenum and gives confusing and misleading symptoms. The usual ulcer story is missing. Pain may be continuous or episodic, with or without relation to food and alkalies, and is frequently present at night. Nausea and vomiting are frequently present periodically. Marked weight loss is common. X-ray shows an ulcer crater or niche with disturbed gastric evacuation and a lengthening or distortion of the pyloric channel. A strict medical regimen for prolonged periods may be successful, but surgery is frequently the final recourse.

Gastrojejunal ulcer— By this term is meant all ulcers occurring in the region of an anastomosis between the stomach and jejenum. They usually follow surgery for duodenal ulcer, being rare after operations for gastric ulcer. The most logical explanation for their occurrence is a perpetuation of the causes of the original lesion. The symptoms are essentially the same as those previously exhibited. A carefully taken history is the best means of diagnosis, an x-ray may or may not show an ulcer. Hospitalization with a strict medical regimen should be tried. Surgery is a last recourse.

Ulcer Associated with Meckel's Diverticulum The pain varies but is usually a cramp-like affair located in the periumbilical region. It tends to be

relieved spontaneously two to three hours after meals. The first complaint is usually rectal bleeding, which may be slight or severe, acute or chronic. It is one of the common causes for rectal bleeding in children, but age is no criterion for diagnosis. The history alone should make one suspicious of this condition. Roentgenological diagnosis is extremely difficult. The diagnosis is usually made at the time of exploratory laparotomy. Treatment is surgical removal of the diverticulum.

Complications The complications of ulcer are perforation, hemorrhage, and obstruction. Here again we have the question of medical or surgical care. The final decision should be determined by a complete medical-surgical team.

Perforation may be classified as 1. acute—a sudden free communication between the G.I. tract and the peritoneal cavity; 2. subacute—a slow leak which may become walled off; 3. chronic—the perforation into an adjacent organ with sealing off before actual leakage occurs.

In acute perforation there is a sudden onset of severe abdominal pain which may radiate particularly to the back and shoulder region. The abdomen becomes tense and exquisitely tender. The typical "board-like" abdomen is well known. There is some elevation in temperature and as a rule an increase of the white cell count. X-ray studies will show free air in the peritoneal cavity in the majority of cases. In the differential diagnosis we must consider acute appendicitis, acute pancreatitis, acute cholecystitis, mesenteric thrombosis, coronary thrombosis and renal colic among others.

Subacute and chronic perforations are the most frequent causes of intractable pain. Perforation into the pancreas gives pain in the back; perforation beneath the diaphragm produces pain in either shoulder; perforation into the liver would give pain in a corresponding area. The pain slowly increases in severity and is either not relieved by food or only partially so. It may be constant pain with few or no remissions, and is a fairly regular night occurrence.

Clinically there are few signs of value. Except for the change in the character of pain and a shift in tenderness, there are no signs of peritoneal irritation. The temperature is not elevated; there is little if any change in the white cell count. X-ray may show signs of a sinus tract or the presence of

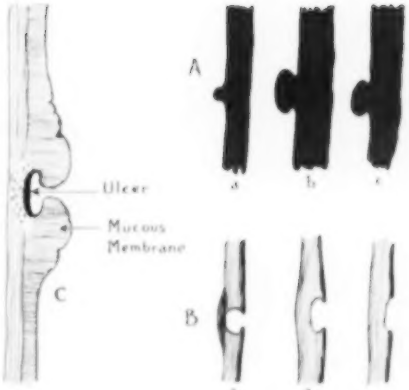

Fig. 10. A. Typical x-ray appearances of gastric ulcer on the margin near lesser curvature.

B. Diagrams of pathological specimens of

- **a.** perforating ulcer
- **b.** penetrating ulcer
- **c.** mucous membrane erosion ulcers

C. False impression of perforation given by the breaking of the mucous membrane around the ulcer. (after Barclay)

a confined air bubble at the site of perforation.

The treatment of perforation has shown a gradual swing away from surgery. At one time this was considered the method of choice in all perforations, to-day it remains such only in acute episodes. With improvements in techniques, the use of antibiotics and a better understanding of fluid balance there has been of recent years a tendency to try medical therapy first. Adequate medical care calls for continuous gastric suction, the maintenance of fluid balance, the liberal use of antibiotics and other supportive measures. With this procedure perforations may become sealed off and complete recovery ensue without surgery. Anticholinergic drugs, of the newer type, may be of some value in easing the patient, but do not appear to be of any real therapeutic help in promoting healing of the ulcer. Certainly no harm can come from such a conservative routine. If under constant observation, satisfactory progress is not made, then surgery may be performed. The type of surgery will depend on the surgeon who performs the operation and the findings at the operating table.

Obstruction may be due to either edema and spasm or to scar tissue formation. It is essential that an accurate differentiation be made and this will require a careful evaluation of all data—history, test meals, radiography, and blood. The history reveals fullness and abdominal distention following meals. Pain may range from mild infrequent cramps to severe steady pain. Regurgitation and vomiting are present in proportion to the extent of obstruction. Examination shows some evidence of abdominal distention together with varying degrees of tenderness. Gastric peristaltic waves may or may not be present. The one characteristic finding is a succussion splash over the stomach. Laboratory findings are of no great significance. In advanced obstruction, the x-ray is of definite benefit in making a diagnosis. However, in low-grade retention or obstruction, the ordinary technic may not be beneficial. In this case, it may be necessary to give a light meal with the barium to reveal details.

All patients with obstruction, or suspicion thereof, should be hospitalized for observation and treatment. Parenteral fluids with careful attention to electrolyte balance are the keystone of treatment. In association with this one should employ continuous gastric suction. Atropine given parenterally is of questionable value. The anticholinergic drugs may be valuable in acute retention due to active ulcer with associated edema and spasm. However, they are contraindicated in severe obstruction with a dilated stomach. Fluids and suction are continued until the type of obstruction is determined. If organic, surgery is the immediate procedure; if not, then after 24-48 hours a liquid diet is begun with continuous night suction. If retention does not decrease in five to seven days, it is assumed that the obstruction is due to scarring and surgery is indicated. In partial obstruction, x-ray may not show the usual signs of retention. However, on return to solid diet, the clinical signs of obstruction return and surgery is then indicated.

Hemorrhage is a major problem when it occurs, and is another battleground for type of management. It is conceded by most that a mild hemor-

rhage can be treated medically. The routine here is absolute bed rest, the usual routine for acute ulcer therapy, and careful and repeated studies of the blood (Hb. and R.B.C.), blood pressure and pulse to determine early signs of further bleeding or cessation thereof. Early x-ray is optional. Transfusions are conceded to be unnecessary in mild cases. Once the bleeding has stopped, interval therapy is started.

It is in the moderate to severe hemorrhage that the great battle is waged. What is a severe or massive hemorrhage? Many feel that severe hemorrhage is one in which the Hb. falls below 8 Gms., the R.B.C. below 3,000,000, the hematocrit below 30%. Others state that if it requires more than 1000-1500 cc. of blood to restore the normal volume, a severe hemorrhage has occurred. Still further claims are made that it is not the amount of blood lost, but the rapidity of loss that counts.

The surgical approach is one of immediate surgery, the type of procedure depending on the surgeon's choice and condition of patient. The medical approach is early feeding if no nausea or vomiting is present; if it is, then continuous gastric suction is employed. If the patient's condition is severe enough, fluids are given and shock is combated by the usual methods. The anticholinergic drugs have come in for some investigation here. Theoretically, they should be of benefit because they decrease acidity and motility. However, relaxation of the musculature near the ulcer might interfere with hemostasis. Sufficient relaxation might induce paralysis of the stomach, which is most undesirable if surgery is to be performed. Definitely, they should not be used in active bleeding unless gastric suction is employed.

The largest bone of contention is whether or not to transfuse and if so when. Although some opinions are in favor of replacing all blood loss, the majority opinion seems to be to replace only some of the loss. This is based on the premise that shock is nature's way of providing rest, recumbency, reduced blood pressure and blood volume. To counter this shock, unless it be severe with profound anoxemia, is to help raise the blood pressure and thus cause a blow-out of the clot. It seems that hemorrhaging peptic ulcers lose less blood if they can be kept a little below par for 24 hours or so after the onset of bleeding.

As to treatment in the quiet phase following hemorrhage there are varying views. Some advise operation after one bleeding spell especially if the patient is over 50; others say age is no factor. In all, we must consider the severity of bleeding, number of hemorrhages, physical condition of the patient, available medical and surgical care, the economic and social status of the patient, and finally the patient's attitude towards surgery.

Uncontrollable pain may be due to failure to comply with the ulcer regimen, to some psychic disturbance of the patient, or to a walled off perforation. Barring some definite complication, no type of treatment will solve these cases. Neither medical nor surgical care is a sure solution. This should be explained to the patient and he should be allowed to make the decision between surgery and a continued medical regimen.

Malignancy vs. Ulcer When is an ulcer an ulcer, when is it a malignancy? Do malignancies always start as such? Can a benign lesion become malignant,

and if so at what point in time does the transition take place? These questions are of great concern, for in their solution lies the choice of therapy. We can confine ourselves to gastric lesions in this discussion, for cancer of the duodenum is exceeding rare. Perhaps the final solution will only be found when adequate tissue studies can be made.

It has been held for years that ulcer on the greater curvature is always malignant. However[45] "evidence appears to be accumulating attesting to the unreliability of the generally accepted belief that ulcers on the greater curvature are nearly always malignant. Although the region is still to be considered potentially dangerous with respect to malignancy, careful and complete clinical studies may result in an increasing percentage of correctly diagnosed benign lesions in this location."

In the light of this feeling, a more conservative approach is being followed. True, when a diagnosis of cancer is made, surgery is the treatment of choice. Where any reasonable doubt exists, a comparatively short period of watchful waiting may be employed. It would be best during this period for the patient to be hospitalized so that a proper medical routine can be followed. Frequent x-ray studies at weekly intervals should be made to provide almost continuous follow up studies. Benign lesions under such a routine should heal in six to eight weeks. Failure to do so means in all probability that the lesion is malignant and should be removed surgically. If at the end of such a period there still remains doubt, then surgery again offers the best prognosis.

The surgical adherents argue that the history is of little value in distinguishing between benign and malignant lesions. Neither the duration of symptoms nor age of the patient are sufficiently accurate to aid in differentiation. Physical examination is of no value because by the time signs of malignancy appear, it is usually too late to help the patient. It is estimated that some 10 to 20% of supposed benign lesions are proven to be malignant at surgery. In addition we do not know whether a benign lesion can become malignant nor do we know exactly when a lesion does become malignant if it does. Since the best way to treat malignancy anywhere is by early detection and removal, it would seem advisable to follow the same rules in gastric lesions. Finally, because of improved operative techniques, anesthetics, antibiotics, and general knowledge of post-operative care, the mortality in gastric surgery has been considerably lowered and should not be more than 2 to 4%.

Prognosis This was concisely stated in a report from[46] Presbyterian Hospital, New York, which concluded that the immediate results were usually good. After healing, medical management appears to have little influence. The majority have recurrences about once every two years. The long term outlook is thus unpredictable. These findings are similar to those found in other long term studies.

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26. Antrenyl with Phenobarbital, Ciba Pharmaceutical Products, Inc.; Banthine with Phenobarbital, G. D. Searle & Co.; Centrine with Phenobarbital, Bristol Labs. Inc.; Co-Elorine, Eli Lilly & Co.; Monodral with Mebaral, Winthrop-Stearns, Inc.; Pamine Bromide with Phenobarbital, The Upjohn Co.; Prantal Methylsulfate with Phenobarbital, Schering Corp.; Pro-Banthine with Phenobarbital, G. D. Searle & Co.

27. Bentyl Hydrochloride, Wm. S. Merrell Co.; Pavatrine, G. D. Searle & Co.; Profenil, C. D. Smith Pharmacal Co.; Syntropan, Hoffmann-LaRoche, Inc.; Trasentine Hydrochloride, Ciba Pharm. Products, Inc.

28. Bentyl Hydrochloride with Phenobarbital, Wm. S. Merrell Co.; Pavatrine with Phenobarbital, G. D. Searle & Co.; Profenil-Phenobarbital, C. D. Smith Pharmacal Co.; Syntronal, Hoffmann-LaRoche, Inc.; Trasentine-Phenobarbital, Ciba Pharmaceutical Products, Inc.

29. Dibuline Sulfate, Sharp & Dohme, Division of Merck & Co. Inc.

30. Kutrol, Parke, Davis & Co.

31. Basex, Columbus Pharmacal Co.; Exorbin, Ayerst, McKenna & Harrison, Ltd.; Resinat, The National Drug Co.; Resmicon, Whittier Labs.

32. Allonal, Hoffmann-LaRoche, Inc.; Alurate, Hoffmann-LaRoche, Inc.; Amytal, Eli Lilly & Co.; Butisol Sodium, McNeil Labs, Inc.; Cyclopal, The Upjohn Co.; Delvinal, Sharp & Dohme, Division of Merck & Co. Inc.; Dial, Ciba Pharmaceutical Products, Inc.; Eskabarb Spansules, Smith, Kline and French Labs.; Ethobral, Wyeth Labs.; Ipral, E. R. Squibb & Sons; Luminal, Winthrop-Stearns, Inc.; Mebaral, Winthrop-Stearns, Inc.; Nembutal, Abbott Labs.; Neonal, Abbott Labs.; Pental, Vanpelt & Brown, Inc.; Phanodorn, Winthrop-Stearns, Inc.; Seconal Sodium, Eli Lilly & Co.; Sedabarb, A. H. Robins, Inc.; Sombulex, Schenley Labs, Inc.; Tuinal, Eli Lilly & Co.

33. Adalin, Winthrop-Stearns, Inc.; Bromural, Bilhuber-Knoll Corp.; Clortran, Henry K. Wampole & Co, Inc.; Doriden, Ciba Pharmaceutical Products, Inc.; Dormison, Schering Corp.; Noctec, E. R. Squibb & Sons; Nodular, Hoffmann-LaRoche, Inc.; Sedamyl, Schenley Labs, Inc.; Somnos, Sharp & Dohme, Division of Merck & Co. Inc.

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37. Stuart Amino Acids, The Stuart Co.; Aminonat, National Drug Co.; Protolysate, Meade Johnson & Co.

38. Amino-Concemin, Wm. S. Merrell Co.; Amiron, The National Drug Co.; Am-Vatine, Smith-Dorsey Co.

39. Caminoids, The Arlington Chemical Co.; Ledinac, Lederle Labs, Division American Cyanamid Co.; Protein Hydrolysate, Walker Labs, Inc.

40. Aminovite, The National Drug Co.; Amiprote, U. S. Vitamin Corp.; Vipeptolac, Wyeth Labs.

41. Lesofac, Wyeth Labs.; Lonalac, Mead Johnson & Co.; Melactin, E. R. Squibb & Sons; Protenum, Mead Johnson & Co.; Protinal, The National Drug Co.; Protoban, U. S. Vitamin Corp.; Protoplex, Walker Labs, Inc.; Somagen, The Upjohn Co.; Sustagen, Mead Johnson & Co.; Vi-Protinal, The National Drug Co.

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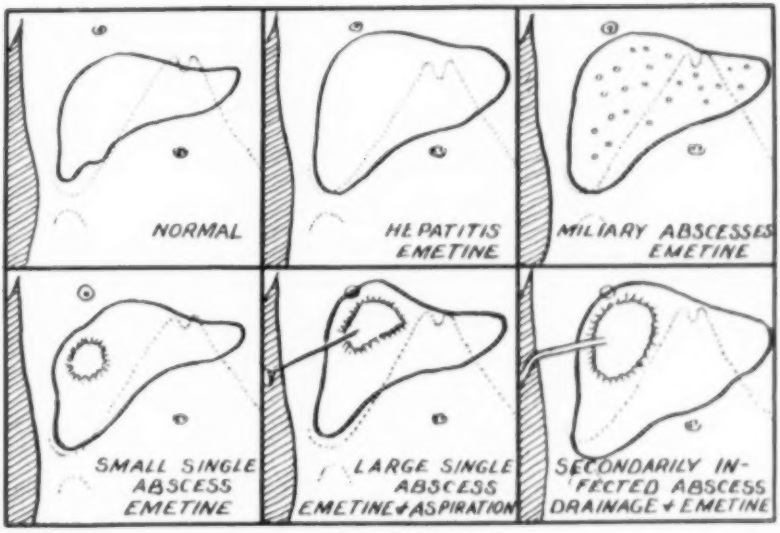

Stages of liver involvement in amebic dysentery and treatment (according to Napier).

Vitamin Deficiency and Blood Chemistry Patterns in the Asthmatic State

N. E. SILBERT, M.D.
H. E. WORNE, Ph.D.
Lynn, Massachusetts

The pattern of nutritional deficiency in the allergic state has previously received only scant attention from medical observers since a comprehensive review of the medical literature failed to indicate any extensive investigation into this field.

Reports on the use of Vitamin C in bronchial asthma have appeared[1-6] and, while therapeutic success was noted in a number of cases, the nutritional status of vitamin C in the allergic individual has not been fully determined. One writer (N.E.S.) has reported on the use of sodium ascorbate in the treatment of bronchial asthma and other allergic manifestations.[7] The use of vitamin D,[8] vitamin E[9] and vitamin P[10] in allergic states has met with little or no success.

In a series of 250 adult patients suffering from various allergic manifestations, of which 53 per cent were diagnosed as bronchial asthmatics, biochemical studies of the circulating blood levels for various essential metabolites showed significant reductions of vitamins A, B_2, C, E and the unsaturated fatty acids. This pattern of deficiency was observed in a most substantial percentage of the group studied.[11, 12]

To thoroughly understand the intricate biochemical function of the unsaturated fatty acids in allergy, the effect of their presence in the lipoproteins must be understood. It has been shown that the lipid portion of the lipoprotein molecule protects the protein fraction from the effects of the adjacent proteolytic enzymes. This enzymatic inhibition may only be observed if the lipid molecules possess unsaturation in their fatty acids.[13]

The inhibitory action of the fatty acid fraction depends upon the degree of unsaturation. Alteration of the lipoprotein balance by extraction, oxidation, hydrogenation, etc., destroys the antitryptic action of the lipids.[14] It is thought by us that this is one of the mechanisms through which release of histamine in the allergic state is observed. Upon the elimination of proteolytic enzyme inhibition through

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Table I

CIRCULATING BLOOD LEVELS OF CERTAIN ESSENTIAL METABOLITES IN 10 CONTROLS

Patient	Age	Sex	Vit. A mcg 100 cc.	Vit. B_1 mcg 100 cc.	Vit. B_2 mcg 100 cc.	Vit. C mg 100 cc.	Vit. E mg 100 cc.	2350A Diene	2700A Triene	Mg. Per 100 cc. 3000A Tetraene	3745A Pentaene	3750A Hexaene
1	60 yr.	M	31	7.8	51	0.91	1.00	6.4	1.3	3.2	1.2	0.9
2	70 yr.	F	26	8.2	46	1.00	0.93	5.9	0.9	3.0	1.0	1.0
3	40 yr.	F	28	8.0	50	0.98	1.10	6.2	0.4	2.9	1.4	1.2
4	60 yr.	M	30	7.9	53	0.95	0.98	6.0	0.8	3.4	1.6	0.8
5	60 yr.	M	38	9.0	41	0.93	0.95	5.7	1.1	3.1	1.1	0.7
6	60 yr.	M	34	8.3	40	0.92	0.91	5.4	1.0	3.6	1.0	1.0
7	40 yr.	M	29	8.7	54	1.10	1.10	7.2	0.7	3.3	0.9	1.3
8	20 yr.	F	32	8.2	52	0.94	1.12	8.5	0.5	3.0	1.0	0.6
9	30 yr.	M	35	7.6	48	1.10	1.00	6.6	0.2	3.7	0.8	0.9
10	10 yr.	M	40	8.4	50	1.20	0.97	7.0	0.9	4.0	0.7	0.5

alteration of the unsaturated lipids the various proteolytic enzyme systems are activated and protein degradation begins. The toxic, uncontrolled, catabolic activity of the reaction may split off the amino acid histadine from the polypeptide chain as one of its by-products where further conversion into histamine may take place through the enzyme histadine decarboxylase.[15, 16] Inasmuch as histamine exists as a conjugate in almost all tissues, toxic proteolysis arising from lipoprotein destruction releases this conjugate in the cell where it may exert intrinsic action. Cellular diffusion takes place as a result of structural protein proteolysis and histamine may escape into the extracellular fluids where its toxic action may be manifested.

With respect to the four stages of anaphylaxis, corticosteroids are effective against the third stage by eliminating, through the destruction of the unsaturated fatty acids, the secondary histopathological reactions, which leaves the primary pathogenic mechanism of toxic proteolysis of the first two stages unaffected.[17] If there is a deficiency of polyunsaturated fatty acids as a result of insufficient dietary intake, the organism synthesizes monounsaturates from carbohydrates and proteins, i.e., oleic and palmitoleic acids,[18, 19] the use of which produces reduced proteolytic inhibition when integrated into the lipoprotein molecule. Animal experiments[20] have shown that high doses of antigen are necessary for the production of anaphylaxis in the presence of normal levels of lipoproteins containing 2, 3, 4, 5, and 6 double bonded fatty acids.

Methods and Materials Inasmuch as past writings have not shown the partition of the unsaturates into mono-

Table 2

Circulating Blood Levels of Certain Essential Metabolites in 40 Cases of Infantile Asthma Prior to Therapy

Patient	Age	Sex	Vit. A mcg/100 cc.	Vit. B_1 mcg/100 cc.	Vit. B_2 mcg/100 cc.	Vit. C mg/100 cc.	Vit. E mg/100 cc.	Mg. Per 100 cc. 2350A Diene	2700A Triene	3000A Tetraene	3745A Pentaene	3750A Hexaene
1	3.5 yr.	M	13	8.2	33	.44	.85	3.6	0.1	1.0	0.2	0.0
2	5.0 yr.	M	16	7.9	37	.51	.91	3.1	0.4	0.2	0.0	0.0
3	3.0 yr.	M	11	7.3	40	.42	.83	4.0	0.6	0.0	0.4	0.0
4	6.0 yr.	M	18	8.0	35	.39	.87	4.2	0.3	0.6	0.1	0.2
5	4.5 yr.	F	14	7.7	31	.45	.80	3.9	0.5	0.4	0.5	0.4
6	4.0 yr.	F	12	8.1	36	.47	.78	3.7	0.4	0.0	0.0	0.1
7	5.5 yr.	F	15	9.3	35	.50	.90	4.1	0.8	0.6	0.0	0.3
8	6.0 yr.	M	17	8.7	42	.43	.88	3.3	0.0	0.3	0.3	0.0
9	4.0 yr.	M	23	8.4	44	.38	.82	3.8	0.2	0.1	0.6	0.0
10	5.0 yr.	M	10	9.0	38	.42	.84	3.1	0.7	0.9	0.0	0.5
11	2.0 yr.	M	12	8.4	33	.47	.78	3.1	0.3	1.2	0.0	0.0
12	3.0 yr.	M	9	7.9	42	.50	.74	4.0	0.7	1.1	0.3	0.0
13	5.0 yr.	F	17	9.0	35	.42	.83	3.8	0.4	1.3	0.2	0.0
14	6.0 yr.	F	20	8.7	39	.39	.81	4.1	0.5	0.2	0.5	0.0
15	3.0 yr.	M	11	9.3	32	.45	.82	4.3	0.4	0.0	0.0	0.0
16	1.5 yr.	M	14	8.2	40	.43	.84	3.7	0.6	0.0	0.1	0.3
17	4.0 yr.	F	19	8.5	44	.42	.87	3.5	0.2	0.0	0.7	0.1
18	6.0 yr.	M	23	8.0	38	.44	.78	3.2	0.0	0.3	0.4	0.0
19	5.0 yr.	F	12	7.8	45	.47	.75	3.9	0.0	0.7	0.0	0.4
20	3.0 yr.	F	15	9.3	31	.40	.86	4.0	0.8	1.0	0.0	0.0
21	3.0 yr.	F	10	8.1	36	.38	.80	4.0	0.8	0.7	0.0	0.0
22	2.0 yr.	M	16	8.6	34	.35	.79	4.4	0.4	0.6	0.0	0.0
23	1.5 yr.	M	21	7.5	30	.43	.82	3.4	0.9	0.8	0.1	0.1
24	5.0 yr.	M	17	8.5	39	.41	.87	4.0	1.0	0.8	0.0	0.0
25	4.0 yr.	M	14	9.2	40	.37	.84	3.3	0.6	1.3	0.8	0.6
26	6.0 yr.	M	18	8.3	33	.39	.81	3.6	0.5	0.4	0.2	0.3
27	1.0 yr.	M	12	8.0	41	.45	.78	3.8	0.0	0.0	0.9	0.5
28	1.5 yr.	M	19	7.8	40	.40	.92	3.5	0.0	0.5	0.1	0.7
29	6.0 yr.	M	23	7.3	43	.46	.88	4.2	0.3	0.7	0.1	0.0
30	2.0 yr.	M	16	8.8	38	.39	.83	4.5	0.7	0.1	0.4	0.3
31	1.0 yr.	F	13	9.1	35	.30	.90	3.1	0.3	0.8	0.6	0.0
32	4.0 yr.	F	20	7.7	39	.42	.85	5.2	0.0	0.3	0.0	0.1
33	3.0 yr.	M	11	8.4	37	.28	.89	3.0	0.0	0.4	0.5	0.4
34	6.0 yr.	M	27	7.6	34	.33	.76	3.7	0.2	0.9	0.2	0.0
35	2.0 yr.	M	15	8.2	40	.31	.84	4.3	0.6	0.3	0.0	0.5
36	3.0 yr.	M	17	9.8	32	.39	.91	4.0	1.2	0.2	1.1	0.0
37	5.0 yr.	F	14	7.4	41	.36	.88	4.0	0.1	0.7	0.7	0.0
38	2.0 yr.	M	22	8.0	36	.43	.79	3.3	0.9	0.5	0.0	0.0
39	1.0 yr.	M	12	8.9	44	.37	.82	4.1	0.5	0.0	0.9	0.1
40	6.0 yr.	M	18	7.8	30	.35	.86	4.3	0.1	0.1	0.9	0.3

unsaturated fatty acids and polyunsaturated fatty acids it was decided to ascertain the polyunsaturated fatty acid fractions of the total blood fatty acids as well as the essential metabolites in the cases of infantile asthma chosen for study.

To determine the circulating blood levels of vitamin A,[21] vitamin B_1,[22] vitamin B_2,[23] vitamin C,[24] vitamin E[25] and the polyunsaturated fatty acids,[26] blood specimens of ten controls between the ages of one and eight years and forty patients with ages ranging from a year to six years were drawn on a fasting basis. The alkali conjugated fatty acids which had been prepared by the method of Holman and Burr for the determination of the absorption coefficients of the 2, 3, 4, 5 and 6 double bonded fatty acids were diluted along with the control blanks with absolute methanol (BP 64.1° C.,$^{0°}$d 1.3276). Spectral densities were determined on a Beckman DU spectrophotometer at wave lengths of maximum absorption. Extinction coefficients for linoleic, linolenic and arachidonic acids were determined by Beadle and Kraybill[27] while those for the pentaene and hexaene fatty acids were determined by Widmer and Brown.[23]

Experimental Study The results of the analysis of the ten controls and the forty cases of infantile asthma are tabulated in Tables I and II. Based on these figures a general vitamin supplement of the following formula was prepared:

Vitamin A	5000 USP Units
Vitamin B_1	1 mg.
Vitamin B_2	2 mg.
Vitamin B_6	1 mg.
Calcium Pantothenate	5 mg.
Niacinamide	15 mg.
Vitamin B_{12}	1 mcg.
Vitamin C	150 mg.
Vitamin D	200 USP Units
Vitamin E	2 mg.

In order to ascertain the effects of the polyunsaturated fatty acids in infantile asthma, thirty of the cases were given the general vitamin supplement three times a day and ten drops (one gram) of the polyunsaturated fatty acids for a period of ninety days. The remaining ten cases received the general vitamin supplement and the polyunsaturated fatty acids were deleted from the treatment. At the end of the experimental period circulating blood levels were determined to ascertain the results of the therapeutic program and to correlate the clinical observations with the laboratory findings. The results of these determinations are tabulated in Table III.

Results The thirty cases of infantile asthma that received the general vitamin supplement plus the polyunsaturated fatty acid drops showed some clinical evidence of cessation of their symptoms. In some cases in this group that had accompanying their asthmatic syndrome, atopic eczema, a subsidence in the eczematous lesions was also observed.

The ten patients that received the general vitamin supplement without polyunsaturated fatty acid drops did not seem to respond as well as those cases that had received them and the degree of improvement of the eczematous lesions and the asthmatic symptoms were not altogether as favorable, as in the group receiving the polyunsaturates. The basic purpose of this paper, it must be stressed, was undertaken to evaluate the metabolite patterns rather than therapy.

Summary

1. Fifty cases (ten controls and forty cases of infantile asthma)

Table 3

Circulating Blood Levels of Certain Essential Metabolites in 40 Cases of Infantile Asthma After 90 Days of Therapy

Patient	Age	Sex	Vit. A mcg./100 cc.	Vit. B_1 mcg./100 cc.	Vit. B_2 mcg./100 cc.	Vit. C mg./100 cc.	Vit. E mg./100 cc.	Mg. Per 100 cc. 2350A Diene	2700A Triene	3000A Tetraene	3745A Pentaene	3750A Hexaene
1+	3.5 yr.	M	26	8.0	52	0.93	0.97	5.6	0.4	3.0	0.9	0.7
2+	5.0 yr.	M	29	7.5	49	1.00	0.99	6.0	0.3	3.2	0.7	0.4
3+	3.0 yr.	M	31	8.3	50	0.97	1.00	5.8	0.5	3.6	0.9	0.5
4+	6.0 yr.	M	40	7.9	46	0.90	0.95	6.1	0.3	3.4	0.5	0.7
5+	4.5 yr.	F	38	8.0	54	0.92	1.10	5.0	0.6	3.0	0.8	0.9
6+	4.0 yr.	F	35	8.3	47	0.88	0.91	7.4	0.3	4.1	0.5	0.6
7+	5.5 yr.	F	30	8.2	56	0.95	1.00	6.3	0.8	3.9	0.7	0.9
8+	6.0 yr.	M	25	9.0	48	0.89	0.90	5.4	0.7	4.2	0.6	0.8
9+	4.0 yr.	M	39	8.0	51	0.97	1.10	6.0	0.4	4.0	0.4	0.7
10+	5.0 yr.	M	27	8.4	55	0.85	0.92	5.7	0.6	3.9	1.0	0.5
11+	2.0 yr.	M	36	9.1	50	0.90	1.20	6.2	0.9	5.8	1.0	0.3
12+	3.0 yr.	M	30	7.6	53	0.81	0.95	6.0	1.1	4.2	1.7	0.0
13+	5.0 yr.	F	34	8.2	49	0.93	0.99	6.0	0.4	6.5	1.2	1.0
14+	6.0 yr.	F	41	7.7	55	0.97	1.00	5.9	0.8	5.3	0.9	0.9
15+	3.0 yr.	M	32	8.3	45	1.00	0.96	6.5	0.3	4.0	1.3	0.5
16+	1.5 yr.	M	29	7.9	52	0.90	1.20	5.8	1.0	5.9	0.8	1.2
17+	4.0 yr.	F	35	8.7	49	0.86	0.94	6.1	0.7	8.1	0.8	1.1
18+	6.0 yr.	M	41	8.0	50	0.91	0.97	5.7	0.8	5.8	1.4	0.6
19+	5.0 yr.	F	33	7.8	53	1.10	1.00	6.3	1.2	5.6	1.1	1.0
20+	3.0 yr.	F	26	7.9	50	0.99	1.10	7.4	0.2	5.4	1.5	0.9
21+	3.0 yr.	F	29	11.4	55	0.93	0.98	6.8	0.5	4.9	1.9	0.4
22+	2.0 yr.	M	34	9.4	50	0.88	1.00	6.6	0.7	4.5	1.0	0.7
23+	1.5 yr.	M	39	8.6	48	0.90	0.92	6.2	1.3	5.0	1.6	0.6
24+	5.0 yr.	M	31	8.8	52	0.85	0.99	8.1	0.4	5.5	0.9	0.3
25+	4.0 yr.	M	29	7.8	49	1.00	0.93	7.3	1.0	4.1	1.2	1.2
26+	6.0 yr.	M	36	8.9	51	0.97	1.10	6.7	0.8	8.7	0.7	0.8
27+	1.0 yr.	M	25	7.4	45	0.83	0.89	6.4	0.6	5.1	0.8	1.1
28+	1.5 yr.	M	30	8.0	52	0.95	0.96	6.9	0.2	5.8	1.5	0.7
29+	6.0 yr.	M	41	8.5	49	1.00	1.20	7.0	1.1	4.9	1.1	0.5
30+	2.0 yr.	M	27	7.9	50	0.89	0.90	6.5	0.5	5.2	0.9	1.0
31—	1.0 yr.	F	31	8.2	47	0.90	0.98	3.2	0.4	0.0	0.4	0.1
32—	4.0 yr.	F	28	8.6	40	0.78	0.87	5.0	0.0	0.1	0.0	0.0
33—	3.0 yr.	M	39	8.4	49	0.85	1.00	3.4	0.2	0.2	0.1	0.5
34—	6.0 yr.	M	32	8.2	56	0.74	0.89	3.9	0.4	1.0	0.0	0.0
35—	2.0 yr.	M	24	9.0	42	0.61	0.84	4.0	0.7	0.3	0.0	0.4
36—	3.0 yr.	M	35	9.4	48	0.77	0.91	4.3	1.0	0.4	0.9	0.0
37—	5.0 yr.	F	29	7.8	44	0.62	0.85	4.5	0.0	0.9	0.5	0.0
38—	2.0 yr.	M	33	8.9	53	0.79	0.91	3.0	1.0	0.8	0.0	0.0
39—	1.0 yr.	M	26	9.0	39	0.55	0.83	3.9	0.4	0.3	0.5	0.2
40—	6.0 yr.	M	42	8.7	42	0.67	0.88	4.4	0.2	0.0	0.7	0.4

+ = General Vitamin Supplement plus Polyunsaturated Fatty Acid Drops
— = General Vitamin Supplement only

were studied to determine the fasting blood levels of vitamins A, B_1, B_2, C, E and the polyunsaturated fatty acids.

2. Comparison of the circulating blood levels of the ten controls with the forty cases of infantile asthma showed statistically important reductions of vitamins A, B_2, C, E and the polyunsaturated fatty acids.

3. Thirty of the cases of infantile asthma were given a general vitamin supplement three times a day and ten drops (one gram) of the polyunsaturated fatty acids four times a day for a period of ninety days. The ten remaining cases were given the general vitamin supplement three times a day and the polyunsaturated fatty acids were withheld from treatment.

4. The comparison of the circulating blood levels determined prior to therapy with those determined after ninety days of treatment showed levels in the normal ranges and compared favorably with the levels determined in the ten controls at the inception of the study.

5. The thirty cases of infantile asthma treated with the general vitamin supplement plus the polyunsaturated fatty acids for a period of ninety days, showed definite clinical improvement. Dyspnea, wheezing, colic and skin manifestations were diminished. The ten cases that received the general vitamin supplement but not the polyunsaturated fatty acid drops showed less improvement and did not respond as favorably to treatment.

6. As a result of these studies it is felt that the polyunsaturated fatty acids together with other deficient metabolites are important factors in the treatment of infantile asthma and infantile eczema and should be further studied and evaluated as adjunctive therapy in the management of certain allergic disorders.

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214 Ocean Street

Lues and Tuberculosis of the Respiratory System

N. B. JAFFE, M.D.
Bridgeport, Connecticut

The literature on phthisis is phenomenal in volume, prolific, and mountainous in scope. The simultaneous prevalence of tuberculosis and lues in the same person is a very frequent occurrence. Both spring from similar social evils and produce lesions and symptoms of great similarity. To augment its clinical and scientific importance is a difficult task. The knowledge and awareness of this disease is replete, both with the profession of the laity.

But, lues of the respiratory system, per se, or complicated with tuberculosis although known, is still remaining in a misty background. It has been expressed that both have a similarity in many aspects. Their coexistence is not rare, both springing from similar socio-economic soil. In 1916, a group of physicians associated with the Tuberculosis Commission of Connecticut discussed the prevalence of tuberculosis with lues. Their line of thought and deductions were based on sound clinical facts noted in their sanatoria.

From an observation of a great number of patients, afflicted with these maladies, in a southwestern institution, very definite impressions were noted. It could not be accurately ascertained which disease developed first, or involved the body simultaneously. The majority were untreated for lues, but considerably for tuberculosis. The deterioration, chronicity, the unyielding response to therapeusis, and the mortality were appalling.

Lues may attack the larynx, both as an early or late manifestation, and involve any portion. There is a catarrhal change, congestion, mucous patches and erosion. Tertiary lesions appear late, forming gummata, which may break down, and cause scarring, retraction, and deformities. Cough, hoarseness, and aphonia may develop in such a condition.

Tracheal involvement is located in the upper or lower third, especially at the bifurcation. The mucous lining of the trachea and large bronchi may be the seat of catarrhal inflammation, which causes great susceptibility to

colds during the secondary stage. The tertiary lesions may occur in the trachea and large bronchi as gummatous infiltrations?. Here, swelling, scarring, perforation into the mediastinum, esophagus, or pulmonary artery may take place. Sloughing of the cartilaginous structures, which may be expectorated, followed by stricture, is not frequent.

The symptoms following the above luetic pathology are: dry cough, expectoration and substernal soreness. Later, the cough becomes productive, with mucoid or mucopurulent sputum. If an existing gumma becomes absorbed, the dry cough may reappear. If there is ulceration, blood streaking and hemorrhage is possible, which may be fatal. Dysphagia and stenosis, obstruction to breathing, deep cyanosis, and sometimes death may result. The physical signs in unfavorable cases are: feeble breath sounds and respiration; the muscles of the neck and chest display inspiratory retraction and a whistling quality of the respiratory sounds.

Puckered and radiating scars are at times found in the lung. Gummata in the form of various tumor-like masses may occur anywhere in the lung. Gummatous masses produce indurative processes about the large vessels at the hilum and large bronchi, with thickening of the adventitial walls of the vessels, constriction of the bronchi, scarring and bronchiectasis. In rare cases, ulceration and cavity formation are present. A diffuse fibrosis is a definite feature in some cases.

The congenital form is the most common, where the child is either born dead, or dies in a few days. The lung is solid, pale, gray in color, and shows an interstitial pneumonia, with many spirochetes, and extensive fibrosis. The alveoli are small, separated by fibrous tissue, and gummatous lesions are seen.

The clinical evidence of pulmonary lues is based on the therapeutic test, and in others on autopsy findings. Lisser reported seven cases; Lisser and Harris six cases. McIntyre found that the literature between 1906 and 1924 yielded twenty-seven instances in which the diagnosis was verified at autopsy. Among 2,300 autopsies at Johns Hopkins Hospital twelve were syphilis of the lung. Among 3,000 autopsies at the Massachusetts General Hospital, one case revealed indurative pneumonia with cavity formation. Seymour in a study of 4,300 autopsy protocols, 314 of which demonstrated lesions due to lues, found the lung involved in twelve cases, and two more consisted of pleural scars.

The symptoms are not in any way distinctive. There may be cough with or without expectoration. Hemoptysis is not common, but more frequent than in those without lues. Dyspnea and hoarseness are noted in some patients. In the absence of any grave symptoms, with the sputum persistently negative, the presence of luetic stigmata, a positive Wassermann and a response to a therapeutic test, lues should be suspected. Other significant symptoms are: loss of weight; nocturnal headache; and a favorable response to antisyphilitic treatment. In the tertiary stage, a moderate amount of fever is usually present, and emaciation, night sweats and pain over the base of the right lung due to luetic perihepatitis.

There may be coexisting luetic stigmata as nocturnal headaches, keratitis, tenderness and swelling of the sternal ends of the clavicle or ribs, a dilated aorta; miscarriages in women, indura-

tion of the testicle in men, and orchitis fibrosa. There may also be signs of some localized focus in the lungs or elsewhere, or extensive pulmonary fibrosis with bronchiectatic changes.

The salient components in diagnosis of pulmonary specificity are: sputum culture; animal inoculation; positive Wassermann; presence of luetic stigmata; and results of a therapeutic test.

Lues lowers the resistance in the chronic conditions and favors tuberculosis. If both diseases develop simultaneously, or within a short time of each other, the person is apt to be overwhelmed. The tuberculous infection is especially likely to become extremely active, and to pursue a rapid and acute course, and tuberculosis is rarely arrested in such cases.

The following clinical deductions were gleaned from a study of 102 cases of lues and tuberculosis. Streaking and hemorrhages were frequent in the above 10-1; cavitation 20-1; spontaneous pneumothorax 6-1; persistence of positive sputa 30-1. The weakness, productive cough, lack of resistance, and chronicity are very outstanding. Even the colored attendants noted the great havoc, and the crumbling of life when both diseases afflicted the patients.

Summary

In the cases of lues which receive prompt and adequate treatment, the prognosis is brighter. But, even those when they acquire tuberculosis, progress very slowly. They are like the smouldering embers that a gust of wind may fan into flames. Any intercurrent infection may act like a torch applied to tall, dry grass. Tuberculosis patients who acquire lues have a stormy course and fall like uprooted trees. It has been observed in many untreated patients, or where treatment was instituted tardily; mostly all ended in a catastrophe.

Even with the advent of the antibiotic therapeusis, early, or late, the disease is difficult to control and the results are inferior following the daring and ingenious surgical procedures. The brilliant results following penicillin administration do not indicate definitely the residual cellular pathology. Of course, many cases are penicillin resistant, in spite of an enormous dosage. Time and research may reveal the post-luetic effect upon the micropathology of the various tissues. It is logical to assume that this infection, which involves all tissues, can not be eradicated without leaving some ill effects, any more than the sea can escape the turbulence of the tempest.

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1119 Stratford Avenue

The Hemiplegic's Friends and Relations

ALBERT FIELDS, M.D.
Los Angeles, California

A tremendous emotional blow has been sustained by a stroke victim. The reaction will be influenced by the basic personality and previous adaptation to stress. All people require patience and kindness, even those rare individuals with 100% intact bodies and sound minds. So much more does this apply to the hemiplegic who is usually apprehensive and afraid of another stroke. Repeated encouragement, reassurance and early retraining[1-4] must be instituted before emotional patterns become fixed. An active program of regular daily activities provides the most effective psychotherapy.[5]

The family attitude and situation are just as important as the lesion and the patient. Many times there is a lack of communication between the patient and the family and a mutual inability to express encouragement and affection. Sometimes over-protection and failure of the family to cooperate in the rehabilitation program represents underlying guilt feelings and personal emotional disturbances. Family arguments, frustrations, tensions, and other worries must be kept from the patient.

To provide the family with satisfactory explanations for the many aspects of the disability strains the patience and time of the nursing staff and attending physicians. In order to obtain cooperation this must be done repeatedly. When possible, group therapy for the patient and the family should be utilized. Seeing others making progress helps overcome the patient's fears and discouragement. "Competition" with other patients is a good antidote for "conversion" symptoms and hypochondriasis resulting from fear and discouragement particularly with lack of early improvement and initial failures with new activities.

The hemiplegic patient often loses the ability to recall, abstract, and integrate information so essential in forming judgments. There is a limitation of flexibility with stereotyped automatic behavior and frequent spells of crying or apathy. These emotional disturbances and "dissolution of intellect" (Hughlings Jackson) are difficult to cope with.

Physical, emotional, social, economical and vocational sequelae can be mitigated by early institution of a comprehensive rehabilitation program. An astute blending of firmness and TLC (tender, loving care) is required. The hemiplegic, like many individuals with other disabilities, resents his dependence on others and at the same time can quickly

get used to being dependent and having others wait on him. As rapidly as possible there must be minimum dependence on others. The hemiplegic must be persistently taught and repeatedly encouraged to utilize each new skill with increasing participation in family, household and group activities.

False hopes are best avoided; the patient and family must make a realistic appraisal of deficits. With realization that full restoration is impossible, discouragement and lack of cooperation can readily develop. There should be less concern with functions lost and more emphasis on functions remaining and hopes for the future. With insight as to factors contributing to disability there will be increased optimism and increased effort on the part of the patient, the family, nurses, and attending physicians. Even with partial residual incapacity, the hemiplegic and all "handicapped" individuals must be trained for maximum utilization of body and mind. Of greatest importance is the patient's realization that a retraining program is under way and with persistence there will be progressive improvement in strength and coordination. Optimistic persistence is the basic element in restoring the handicapped individual to self-care and to social and economic productivity.[6-12]

Speech Therapy Loss of speech is one of the most discouraging elements in cerebrovascular accidents. The patient and the family must be made to understand that inability to express oneself does not mean loss of intelligence and understanding. Group discussion programs for families of aphasic patients should be more widely used.

The aphasic must be given time and opportunity for expression. Common objects must be repeatedly named until the "patterns" are reestablished. The use of a typewriter with the sound hand (even by the hunt and peck system) will help by providing some independence in correspondence. The tracing of letters, then words, with the paralyzed hand and the use of music, radio, television and tape recorders are of benefit. With increased availability of speech therapists for home and sanitarium patients and with increased knowledge of speech mechanisms, even marked aphasics will be improved.

Early ambulation and rehabilitation of paralyzed extremities[1-4] is usually associated with speech improvement. Occasionally there is prompt improvement after cervical sympathetic blocks.[1-3]

Usually comprehension of spoken speech is recovered first. Then motor speech, reading, motor writing and language formulation in that order.[13] Many more aphasics can be helped.

Vocational Therapy Along with cervical sympathetic blocks the most valuable aids to rehabilitation are active exercises against increasing resistance[7] and occupational therapy. For maximum benefit the latter must be vocational rather than diversional, with self-care and even gainful employment as the ultimate goals.

Friends and relations must do much more than pay an occasional "cheer up" visit. They can actively help by helping the patient to use the paralyzed extremities. Thus visitors can assist the regular attendants with the prescribed manipulations, massages, exercises, baths, gait and speech-retraining and so on. Visitors can provide a variety of simple occupational devices that will interest the patient in attempted utilization of the paralyzed muscles.

The paralyzed shoulder and elbow must be supported on high pillows or by a sling, in order to promote proper functioning of the hand and fingers. The device must be clamped or fixed so that the sound hand is left free to support and guide the paralyzed hand. One can begin with tracing outlines of letters and simple objects. Within a few days, coloring, finger-painting, and more intricate tracing should be started. Braiding, weaving, crocheting, hooking rugs, clay work and painting pictures on a numbered canvas are all simple and useful. As the patient improves, increasingly intricate devices must be provided to retain the patient's interest and fully utilize all potentialities.

An integrated whole day program must be adopted for each individual patient.[3-5] Planning and team work by the family and attendants are required in carrying this out. The Bellevue group has listed one-hundred ordinary daily activities.[11] A day to day "improvement chart"[14] provides much needed encouragement for patient, family and attendants. With improvement many patients become encouraged enough to help organize their own activities. As in poliomyelitis patients' contractures must be prevented and surviving muscle elements strengthened and coordinated with substitute movements. In some patients improvement does not begin for weeks and in most patients with a good rehabilitation program improvement continues for months. Hemiplegia therapy is not a short time matter.

Self-help gadgets and devices[15] that increase the individual's self-reliance can be utilized in industry. With minor modifications and adjustments individuals with varying degrees of residual paralysis are able to run even complicated machines.[6-12] During World War II the physically handicapped established an excellent record of industrial productivity. Industry should provide work for the handicapped during peace time.

When a handicapped person learns to enjoy living and to work to the maximum of his ability,[16] the potential wealth of the community is increased and the gain to the individual is beyond monetary measure. This is the aim of rehabilitation therapy.

Summary

1. Emotional aspects in hemiplegia must be treated along with physical disabilities.

2. Family situation is just as important as the patient and the lesion.

3. Most asphasics can be improved by persistent therapy.

4. Occupational therapy must aim at self-care and gainful employment rather than diversion.

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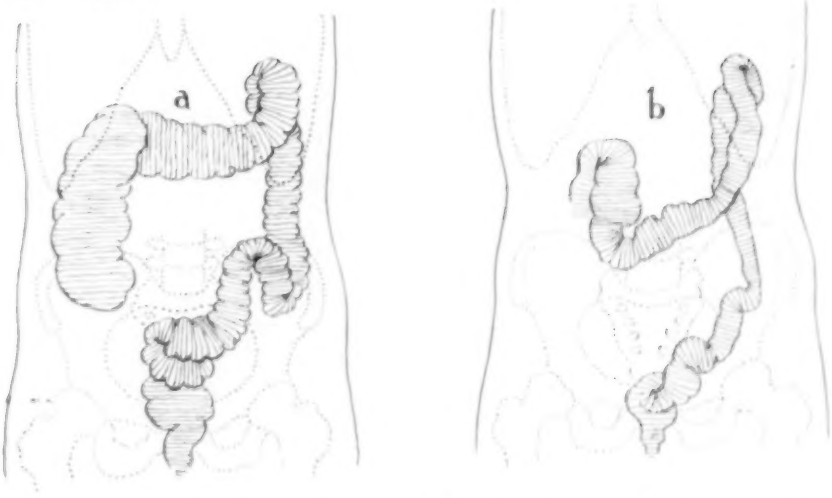
523 West 6th Street

Clini-Clipping



(a) Comparison of the normal colon with the pathological appearance in ulcerative colitis.

(b) Configuration of the colon normally and in ulcerative colitis

Lung Cancer

THEODORE WINSHIP, M.D.
ROBERT ZEPEDA, M.D.
Washington, D.C.

The first successful pneumonectomy for carcinoma in the United States was performed only twenty-two years ago.[1] Since that time a great deal of knowledge has been acquired about lung cancer. Research in pulmonary physiology, anesthesiology, blood transfusions, and antibiotics have made it possible to perform a pneumonectomy with relative safety. Now a thoracotomy is often performed for diagnostic purposes and "coin" lesions are routinely removed, regardless of their nature. Despite this encouraging progress, the mortality rate for patients with carcinoma of the lung remains distressingly high. The reported increase in the prevalence of lung cancer has stimulated many new studies designed to discover the etiology and to improve present methods of diagnosis and therapy.

Etiology It has long been known that there is a high prevalence of lung cancer among men working in the chromate industry, in cobalt and asbestos mines, and more recently among those exposed to radioactive materials.[2-4] It was recently found that a tar-like substance could be extracted from the air in an industrial area, and that this substance would produce cancer when painted repeatedly on the skin of rats.[5] This may be a factor in the production of lung cancer, but many of the patients who develop this disease do not live in the industrial areas.

Numerous articles have appeared recently concerning the causal relation between cigarette smoking and lung cancer. Some very convincing evidence has been produced and many physicians have stopped smoking. The investigators point to the fact that the prevalence of lung cancer is increasing concurrently with the per capita consumption of cigarettes. They also find that a large proportion of patients with lung cancer have been heavy smokers for long periods. Certain investigators believe that carcinoma of the lung may be produced by smoking no more than twenty cigarettes per day for twenty years. A large amount of statistical material has been accumulated and it amounts to good circumstantial evidence, but it has not yet been proved that smoking cigarettes will produce carcinoma of the lung in either animals or humans. These data have been applied only to men. It is said that women have not yet been heavy smokers for long enough to develop cancer.[6-8]

Diagnosis The diagnosis of lung

From the Departments of Pathology and Radiology, Garfield Memorial Hospital, Washington, D. C.

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cancer can often be suspected after a routine history and physical examination but the diagnosis of bronchogenic carcinoma can seldom be substantiated without adequate roentgenograms of the chest. The roentgen appearance of bronchogenic carcinoma is extremely varied and depends on such factors as the type and location of the lesion and the stage of the disease. Tomography may also be useful in demonstrating an ulceration or a narrowing of the lumen of the bronchus. In addition to good roentgenograms, bronchography is often helpful in making a diagnosis when the tumor produces changes in the outline of the lumen of the bronchus.

Before patients are operated upon an attempt is usually made to obtain additional confirmation of the diagnosis of carcinoma in the form of a tissue biopsy or cytologic proof of carcinoma. Frequently, the tumor can be visualized bronchoscopically and a biopsy obtained. If the tumor cannot be seen, bronchial washings may be obtained and examined for the presence of cancer cells. The examination of sputum may also be an aid to the diagnosis. Sputum is easily obtained and the patients need not be hospitalized for the procedure. When tumors are located peripherally bronchial biopsies are not possible and bronchial washings are frequently negative. In these cases an adequate biopsy may often be obtained by aspiration through the chest wall using an 18-gauge needle and a 50 cc. syringe. Pleural fluid when present may also be removed and examined for cancer cells. Their presence indicates pleural involvement and usually contraindicates surgery. Because of the possibility of errors in cytologic interpretation, a pneumonectomy is never warranted on the basis of a positive cytology test only.

Clinical Data During the past ten years at Garfield Memorial Hospital, the diagnosis of carcinoma of the lung was established on 357 patients.* In 264 of these, the diagonsis was confirmed histologically. A clinical diagnosis without biopsy proof was made on eighty-eight patients and five others refused surgery but these have not been included in this series. In the group of 264 proved cases of lung cancer who were treated surgically the average age was 54.2 years, the youngest being 27 and the oldest 84. Only thirty, or 11 per cent, of the patients were women. The most common symptoms in order of frequency were cough or a change in the character of the cough, chest pain, dyspnea and blood-streaked sputum. Twenty patients had no specific symptoms, but were investigated because of pulmonary lesions observed by the roentgenologist on routine chest films.

The present criteria for operability were established approximately ten years ago following the introduction of antibiotics, multiple transfusions, and endotracheal anesthesia. Patients with metastatic carcinoma outside the thoracic cavity and those with involvement of the carina or trachea were not considered operable. Bronchoscopy was performed on 139 patients resulting in a tissue diagnosis in 11 per cent. Fifty-two per cent of the entire series of proved cases were operated upon. Only 33 per cent of the 92 charity patients were operable. Sixty-one per cent of the private patients were explored, but this includes the twenty symptomless patients operated upon because of roentgen findings.

* From the service of Doctor Edgar W. Davis and Doctor Roy G. Klepser.

Table I

CASES EXPLORED		
Resected	85	62% (32% of 264 patients)
Not resected	52	38% (68% of 264 patients)
TOTAL	137	100%

In Table I it is seen that the lung or a portion of the lung was resected in 62 per cent of the patients explored. This represents 32 per cent of the entire group of 264 patients. The presence of mediastinal involvement was usually the reason for discontinuing the operation. During the past two years more radical operations have been done by including the resection of the mediastinal lymph nodes on the involved side. These patients have not yet been followed long enough to establish the value of the procedure, but theoretically this group should show a somewhat better survival rate than the patients having a simple pneumonectomy. Patients dying within 30 days after surgery were classified as postoperative deaths. Sixteen, or 11.6 per cent, of the patients operated upon died during this postoperative period. Part of the credit for this relatively low operative death rate must go to the excellent anesthetists, the blood bank, and to the good nursing care available.

Pathology The histologic diagnosis of lung cancer was established in the same way as in other types of cancer. The diagnosis was made after an evaluation of the structure of the tumor, the degree of anaplasia, and the number and nature of mitoses present.

The surgical material from 264 patients was classified into three groups as shown in Table II.

This is the classification in general usage. Prognosis is based on the clinical stage of the disease and the predominate cell type, so the tumors were arranged in the order of increasing malignancy. The cases were not classified according to Broder's method as it has been found to be of no prognostic value. Squamous carcinoma, often called epidermoid carcinoma, was recognized by the presence of intercellular bridges and keratinization. Adenocarcinomas were characterized by some types of gland formation. At times numerous sections were examined to be certain of the exact classification. Included with the adenocarcinomas were three cases of alveolar cell carcinomas, sometimes called pulmonary adenomatosis. The undifferentiated group included all the other varieties of bronchogenic carcinoma, the most common of which was the "oat-cell" carcinoma. The so-called bronchial adenomas were not included.

Results Excluding the cases which lacked histologic proof of carcinoma there were 126 cases of lung cancer treated during the period 1944-1949. Eighteen patients could not be traced and four died of other diseases but these were included as therapeutic failures. Six patients, or 4.7 per cent of the entire group, were living and well for over

Table II

PATHOLOGIC TYPES OF BRONCHOGENIC CARCINOMA		
	Patients	Percentage
Squamous carcinoma	124	47
Adenocarcinoma	48	18
Undifferentiated Carcinoma	92	35
TOTAL	264	100

five years. This represents 15 per cent of the forty patients whose lungs were resected. Five of these had squamous carcinoma and one had adenocarcinoma. None of the patients with undifferentiated carcinoma lived as long as five years after the diagnosis was established.

The autopsy material from this series comprised seventy-one cases. A review of the findings showed that the pattern of metastases was approximately the same for each type of tumor. The most common sites of the metastatic carcinoma were the bronchial and mediastinal lymph nodes, the liver, the bones, adrenals, brain, and the opposite lung. The impression was gained that squamous carcinoma was slower to metastasize than the other types, and this is confirmed by the five-year survival rates.

The only patients known to have been cured of lung cancer are those treated by surgery. Other forms of therapy have produced palliation only. Some of the undifferentiated tumors, especially the oat-cell type, respond initially to radiation therapy, but most of them recur promptly. Squamous and adenocarcinoma usually do not respond well to radiation but all patients with inoperable lung cancer should receive palliative radiation. The only other therapeutic agent of any value known at this time is nitrogen mustard. This may be administered as Methyl Bis (Beta Chloroethyl) Amine Hydrochloride intravenously, as Triethylene Melamine orally or as Triethylene Thiophosphoramide intravenously or directly into the tumor. Nitrogen mustard derivatives are cancerocidal, but unfortunately they also produce bone marrow depression, so the dosage is limited. Consequently, none of these drugs has more than a palliative effect. The lives of patients with undifferentiated bronchogenic carcinoma may sometimes be prolonged by their use.[9]

It is hoped that the experience gained in the past and the knowledge to be gained from further study and research will enable us to write a more gratifying report ten years from today.

Summary

The data from 264 cases of bronchogenic carcinoma seen at the Garfield Memorial Hospital during the past ten years have been reviewed. Slightly more than half the patients were surgically explored and in 32 per cent the lung was resected.

Only 4.7 per cent of the entire group lived 5 years, but this represents 15 per cent of the patients whose lungs were resected.

Eighty-three per cent of the patients surviving five years or longer had squamous carcinoma.

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10th and Florida.

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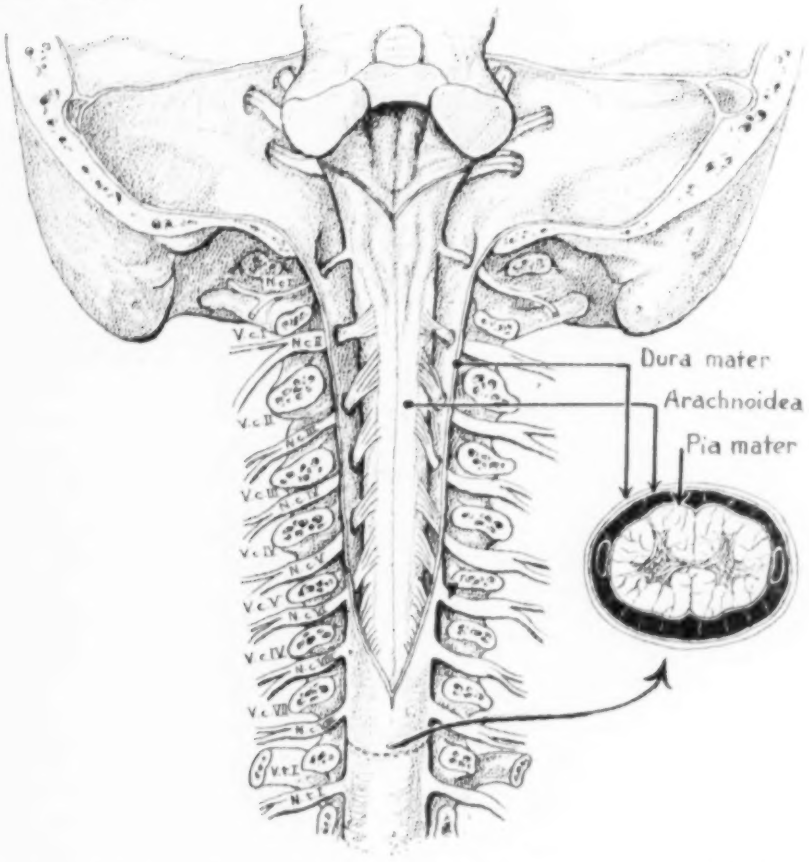


Anatomical diagram of cervical spine showing relation of cervical nerves to cervical vertebrae, meninges and cord.

The Use of An Endothelial Cuff In Tendon Repair

H. B. BENJAMIN, M.D.
M. WAGNER, M.D.
W. ZEIT, Ph.D.
R. K. AUSMAN*
Milwaukee, Wisconsin

The trend toward industrialization has caused an increase in industrial accidents. The daily use of modern machine tools has increased the incidence of hand injuries.

Because a good functional result is almost mandatory, injuries requiring the suturing of tendons tax the ingenuity of the best qualified surgeon. Economically it is important to have a short convalescence and as perfect a functional result as possible. To bring this ideal condition about in the shortest time with the best end result the surgeon must (1) eliminate the dangers of infection and (2) keep the scar tissue formation at a minimum. The preoperative and postoperative care and the various surgical procedures are well known. This study was instituted with one objective in mind, namely to restore the function of the lacerated tendon to near normal in the shortest possible time. With the advent of blood vessel banks and with the availability of donor blood vessels we set up the following problem: the use of a sleeve of vein over the suture line of a repaired lacerated tendon.

Procedure For the purpose of this investigation the Achilles tendon of the dog was used. Proper surgical exposure and hemostasis was instituted bringing the tendon with its surrounding sheath into view. The sheath was opened, transected and retracted. The tendon was severed in such a manner as to produce a situation analogous to that which might be anticipated in a traumatic laceration of a tendon. Sutures were placed in each segment according to the method devised by Bunnell. The knots were not tied permitting the two ends of the sutures to hang free.

At this time a large vein, usually the external jugular, was exposed and a section of sufficient length removed intact. A suture was placed at each end of this endothelial cuff, taking care to catch only enough tissue to bring about rea-

Marquette University, School of Medicine, Department of Anatomy, Milwaukee, Wisconsin.
*Student Assistant.

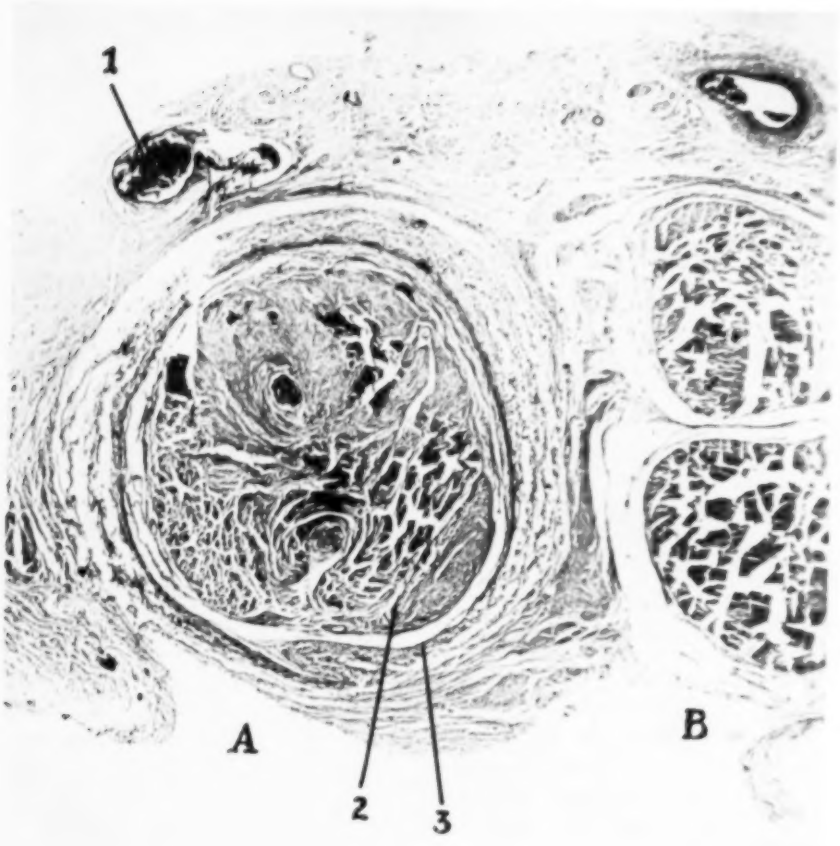
sonable strength and ease of handling. This segment was then threaded over one of the tendon sutures and over the tendon. The previously placed stay sutures in the tendon ends were now tied approximating the ends of the severed tendons. The endothelial cuff was pulled over the suture area and secured to the tendon sheath, providing a full collar of endothelial tissue surrounding the suture line and tendon. Closure was effected in the usual manner. No splints or casts were used.

Discussion This technique seems to have many distinct advantages over others previously presented. First, it provides a means whereby the surgeon may escape the necessity of having a

Figure 1.

A. Cross Section, Tendon with an Endothelial cuff.
1. Suture material.
2. Tendon.
3. Endothelial cuff.

B. Contiguous tendons with normal tendon sheath.



suture line of one layer cross that of an adjacent layer. Second, immediately after the surgery is completed, the repaired tendon is surrounded by a sheath similar to that which is found normally. Although there is a definite difference histologically between the vein sewed into place and normal tendon sheath, from a functional standpoint they both provide the same service. In such an environment the repaired tendon can move freely with no interference of the healing process, thereby eliminating one of the major causes of adhesion formation.

Results In the eight dogs in this series all were permitted to recover at least two and a half weeks. They were never limited in their scope of activity during this period. They often demonstrated amazing ability soon after surgery to move about in a normal manner. Splints, casts or other immobilizing devices were not used. From a functional standpoint all animals had recovered at the end of a two and a half week period. At this time the repaired tendon was removed and sectioned for microscopic study. These sections demonstrated that there was a definite absence of adhesions in almost all of the wound areas. Furthermore, the presence of an intact endothelial cuff with an area devoid of tissue between the tendon and the cuff presented a perfect physiological state in which the tendon could operate smoothly.

The gross appearance of the specimens was similar to that of normal tissue. The endothelial cuff had formed a union with the tendon sheath. Microscopically, the transplanted tissue appeared to be well nourished and normal. The suture line in the tendon itself was well healed and could withstand considerable stress.

Summary

A method of tendon suturing has been presented that is new in scope. Although the results on our dogs were uniformly gratifying, further investigation in this field is warranted before any sound conclusions as to use on humans can be drawn.

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561 North Fifteenth Street

Relief of Muscular Pains and Spasms In Muscular Rheumatism

HENRY M. FEINBLATT, M.D., F.A.C.P.*
Brooklyn, New York

A clinical investigation is reported in which a combination of three well-known drugs provided effective relief of muscular pain and spasm in cases of muscular rheumatism.

Muscular rheumatism is defined as a painful affection of the voluntary muscles and their fibrous structures related to fibrositis. Another common designation is rheumatoid myositis.

The pathological condition is an inflammatory hyperplasia of the white fibrous tissue including the muscle sheaths and fascial layers. The chief symptoms are pain and stiffness in the muscles.

In my experience this syndrome is of very common occurrence. In many cases it is so severe as to interfere with sleep and incapacitate the patient. However, it has received scant attention in medical literature.

The treatment generally advised consists of salicylates and applications of hot baths. Because of their dangerous potentialities, cortisone and corticotropin may do more harm than good. "Most observers agree," says Kammerer[1] in a primer on rheumatic diseases prepared by a committee of the *American Rheumatism Association*, "that cortisone or corticotropin therapy is seldom, if ever, justifiable in fibrositis."

In their discussion of nonarticular rheumatism, the *American Rheumatism Association*[2] states: "Probably the commonest form of rheumatic disease, also the mildest, is a heterogeneous group of conditions producing pain and stiffness in connective tissue structures but not particularly involving the joints. Relatively few persons go through life without at least one attack of painful stiff neck, lumbago, bursitis, or simply stiff muscles or 'myalgia.' Because such conditions are usually mild and often of short duration, the victim usually ascribes such attacks to some overexertion, minor trauma, chilling, or a 'cold,' and treats himself with home remedies. The physician sees only the relatively small proportion of cases in

* Formerly, Director of Medicine at Kings County Hospital, Brooklyn, N. Y.

which the severity or persistence of the pain and stiffness has induced the victim to seek help. Even so, about 30 per cent of patients in arthritis clinics in the United States suffer from non-articular rheumatism, and in Great Britain the proportion is even higher."

Treatment. No single drug has proved entirely satisfactory in the treatment of muscular rheumatism or rheumatoid myositis. Of the individual salicylates, acetylsalicylic acid has served me most efficaciously, probably because of its predominant analgesic action. The *United States Dispensatory*[3] writes that "acetylsalicylic acid is the drug most generally employed in the treatment of acute rheumatic fever."

On the basis of favorable reports from a number of physicians, a therapeutic trial was instituted to evaluate a combination of mephenesin, nicotinic acid and belladonna extract. The possibility was considered that these drugs in combination may have special advantages or exercise a synergistic action.

Of mephenesin *New and Nonofficial Remedies*[4] states that "Suitable doses provide muscular relaxation. . . . The drug may be tried in any situation in which muscular spasm is present. . . ." Nicotinic acid is a vasodilator which increases the local blood supply. Belladonna extract is an antispasmodic of established repute.

Therapeutic Trial. The medication tested was designated MNB* for short. It has the following composition per tablet:

Mephenesin (muscular relaxant)	200 mg.
Nicotinic Acid (vasodilator)	25 mg.
Belladonna Extract (antispasmodic)	5 mg.

The study was conducted on a series of 35 patients suffering from muscular pain and spasm. In 19 cases the diagnosis was muscular rheumatism. This group included 7 men and 12 women. Their average age was 51 years.

MNB was the only medication used. It was given in a dosage of 2 tablets three times daily. The average period of treatment was eight weeks.

Pain was present in all 19 cases of muscular rheumatism. In 13 cases it was so severe as to interfere with work or sleep. In 6 cases the pain was so unbearable as to make it impossible to work or sleep without sedatives.

There was relief of pain in 16 of the 19 cases (84%). This relief was complete in 7 cases (37%), partial in 9 cases (47%), no relief in 3 cases (16%).

All 19 patients with muscular rheumatism had some degree of spasm. In 6 cases the muscular spasm was so severe as to make work impossible. In 8 cases muscular spasm limited motion by about 50% and interfered with work. In the other 5 cases there was approximately 25% limitation of motion.

There was relief of spasm in 16 of the 19 cases (84%). This relief was complete in 8 cases (42%), partial in 8 cases (42%), no relief in 3 cases (16%).

For painful muscular spasms of psychosomatic origin, best results were obtained with the addition of phenobarbital ¼ gr. to the MNB tablets.

No adverse effects of the medication were observed in this series other than

* MNB tablets, Latrodin Tablets by Tolby-Nason Co., Boston, Massachusetts, also available as Latrodin with Phenobarbital ¼ gr. tablets.

temporary pressure in the head in 1 case and an evanescent rash in 2 cases.

Case Reports

Case 1. A.P., a woman 50 years old, height 5 ft. 7 inches, weight 145 lb., complained of severe pain in her right arm. Physical examination was essentially negative except for tenderness and stiffness of the muscles of her right arm, which made it difficult to work. The degree of spasm caused approximately 50% limitation of motion. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for eight weeks. During the first week the patient experienced complete relief of pain and stiffness. In the eight weeks of treatment there was no return of the symptoms. No adverse effects were observed.

Case 2. R.S., a woman 62 years old, height 5 ft. 2 inches, weight 123 lb., complained of pain in her thighs. The physical examination was essentially negative except for tenderness and spasm in the muscles of the thighs, which caused approximately 50% limitation of motion and interfered with work. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for ten weeks. After one week of medication the patient had complete relief of pain and stiffness. There was no return of the symptoms during the next nine weeks of medication. No adverse effects were observed.

Case 3. S.V., a woman 54 years old, height 5 ft. 2 inches, weight 123 lb., complained of very severe pain and spasm in her intercostal muscles which made it impossible for her to work or sleep without sedatives. The spasm caused more than 50% limitation of motion. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for eight weeks. There was partial relief of pain and stiffness in the first week. During the next seven weeks of treatment the pain was considerably reduced, so that it no longer interfered with work or sleep. The spastic muscles were also relaxed to the extent of less than 25% limitation of motion. No adverse effects were observed.

Case 4. R.O., a woman 42 years old, height 5 feet 3 inches, weight 122 lb., complained of pain and spasm in her leg muscles. These symptoms were so severe that she was unable to work or sleep without sedatives. The spasm limited motion more than 50%. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for ten weeks. During this period the pain was considerably relieved, so that it no longer interfered with work or sleep. The limitation of motion was reduced to less than 25%. No adverse effects were observed.

Case 5. F.G., a woman 45 years old, height 5 ft. 3 inches, weight 130 lb., complained of severe pain and spasm in her shoulders and lower back which made it impossible to work or sleep without sedatives. The degree of spasm caused more than 50% limitation of motion. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for ten weeks. After two weeks the patient reported some relief from the pain and stiffness. As the medication was continued, the pain and spasm were reduced to the extent that they no longer interfered with work or sleep and the limitation of motion was reduced to less than 25%. No adverse

effects were observed at this time.

Case 6. V.D., a man 47 years old, height 5 ft. 6 inches, weight 172 lb., complained of severe pain and spasm in his leg muscles. He was unable to work or sleep without sedatives and the spasm caused more than 50% limitation of motion. The diagnosis was muscular rheumatism.

Two MNB tablets were given three times daily for ten weeks. The patient reported partial relief of pain and stiffness after one week of treatment. With continued medication he was relieved considerably, so that the pain no longer interfered with work or sleep and the limitation of motion was reduced to less than 25%. No adverse effects were observed.

Summary

A clinical trial was conducted in a series of 19 cases of muscular rheumatism treated with a combination of mephenesin, nicotinic acid and belladonna extract. This medication provided effective relief of pain and muscular spasm in 16 cases (84%).

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616 Carlton Avenue

Trichomonas Vaginalis Infection

Evaluation of the Susceptibility to Systemic Medication

J. C. SWARTZWELDER, Ph.D.*
J. G. MULÉ, M.D.
W. W. FRYE, Ph.D., M.D.
F. VELLA, M.D.
New Orleans, Louisiana

Carpenter[1] reported the symptomatic and parasitologic cure of eleven patients with vaginal trichomoniasis who were *treated systemically* with chloroquine diphosphate. Systemic treatment of vaginal trichomoniasis would offer important advantages over topical therapy. The following study was made to determine whether or not vaginal trichomoniasis can be cured by the oral administration of chloroquine or other drugs with protozoacidal properties. The selection of some of the drugs was influenced by their activity against *Trichomonas vaginalis* either *in vitro* or when applied to the vagina.

Methods The following drugs were evaluated: chloroquine diphosphate, amodiaquin hydrochloride, primaquine diphosphate, quinacrine dihydrochloride, pyrimethamine and diiodohydroxyquinoline. *All medication was given orally.* No concurrent local therapy was employed.

Only cases with clinical as well as laboratory evidence of trichomoniasis were treated in this study. The infections were characterized by the presence of vaginitis, leukorrhea, pruritus, and the presence of *Trichomonas vaginalis*. The wet smear technique was employed to demonstrate trichomonads in vaginal exudate prior to therapy. When *T. vaginalis* was not demonstrable in wet films after a course of treatment, the vaginal exudate was cultured on C.P.-L.M. (cysteine-peptone-liver-maltose) medium.[2]

Results

Chloroquine Seventeen patients were given a total of 2.5 grams of chloroquine diphosphate over a period of three days. This dosage was used in order to

From the Departments of Microbiology, Obstetrics and Gynecology, and Medicine, Louisiana State University School of Medicine, New Orleans, Louisiana.
* Professor of Medical Parasitology.

repeat the study of Carpenter who employed this drug in the standard antimalarial dosage. Eleven patients were examined one week following the initiation of treatment and trichomonads were demonstrable in smears of the vaginal exudate of seven. Follow-up examinations were obtained on seven patients from two to four weeks after completion of therapy. None of the patients remained consistently negative for *Trichomonas vaginalis*.

Since there appeared to be a decrease in the number of flagellates soon after the institution of therapy in some cases in the above series, a dosage of 0.5 gram of chloroquine diphosphate daily for 18 days was prescribed. On the fifth day of treatment with chloroquine, trichomonads were *not* found in vaginal smears of five of thirteen patients. However, at the time of completion of the eighteen day regimen of therapy, flagellates were again demonstrable in all five cases. Seven of the eight patients in this series who returned for complete post-treatment examination were still infected with *T. vaginalis*. Any suppressive influence which chloroquine *may* have exerted on *Trichomonas vaginalis* apparently was evanescent.

Other Drugs Amodiaquin which, like chloroquine, is a 4-aminoquinoline antimalarial compound, was also evaluated for its therapeutic efficacy. Trichomonas infections persisted in seven out of eight patients treated with a single dose of 0.6 gram of amodiaquin. Post-treatment examinations were started one week after administration of the drug and were continued up to three months.

Quinacrine dihydrochloride was evaluated in nine cases of *Trichomonas vaginalis* infection. The standard antimalarial dosage of a total of 2.8 grams *per os* over a period of seven days was used. The infection was present in eight patients in this series after completion of the course of medication.

Nine patients received 150 mg. of pyrimethamine over a four day period. There was no demonstrable evidence of influence of this drug on the infection in any of the cases.

It was observed that primaquine diphosphate appeared to exert some activity against *Trichomonas vaginalis in vitro*. However, this 8-aminoquinoline compound failed to eliminate vaginal trichomoniasis in eight patients who received 25.6 mg. of this compound daily for fourteen days.

Diiodohydroxyquinoline is a component of some products employed for the topical treatment of trichomonad vaginitis. Since iodine absorption has been demonstrated by a rise in blood iodine in persons who were administered this drug orally,[7] an evaluation of its systemic use for the treatment of vaginal trichomoniasis was made. The dosage employed was 650 mg. three times a day for twenty days. There was no significant therapeutic response to systemic treatment with this drug in sixteen cases.

Discussion Carpenter[1] reported that chloroquine produced cures of vaginal trichomoniasis the following day after treatment was initiated. There was evidence in two of our series of cases treated with chloroquine which suggested suppression of the flagellate infection for brief periods. However, the organisms reappeared within the incubation period for this infection and during the long course of therapy with chloroquine. A similar evanescent suppression of another flagellate of man,

Giardia lamblia, by chloroquine has previously been demonstrated.[4] No effect on vaginal trichomonads could be demonstrated by Feo following the systemic use of five antibiotics alone or in combination with penicillin.[5]

Summary

The report that chloroquine diphosphate *per os* produced a high rate of parasitologic cure of vaginal trichomoniasis was not confirmed by this study. Any apparent suppressive influence of chloroquine on *T. vaginalis* was evanescent. Amodiaquin hydrochloride, primaquine diphosphate, quinacrine dihydrochloride, pyrimethamine, and diiodohydroxyquinoline, *when taken orally*, had no lasting therapeutic effect on *T. vaginalis* infections in women.

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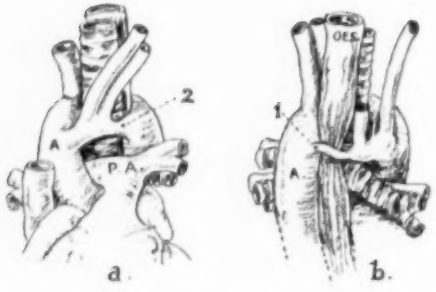


a. Most common type of double aortic arch—2, is the ant. segment of the aortic arch.
b. Double aortic with—1, rare posterior segment of the aortic arch. (after Potts)

Thorazine in Obstetric Cases

EDWIN T. ARNOLD, M.D.
Hogansville, Georgia

From my experience with a small group of thirteen cases I feel so strongly that Chlorpromazine Hydrochloride (Thorazine)* has a definite place in obstetric cases as an amnesic, sedative and relaxant agent that I submit this preliminary report.

I do so at this early stage in order that others who are interested may be stimulated to carry out studies of their own so that more women may have the benefits of this product as early as possible.

Other modifications of dosage and combinations with other agents than the one I describe may prove to be even more effective.

Upon study of the literature available on this product I felt that there could be no contraindication to the use of one or two 25 mg. tablets administered orally early in labor. The actual procedure in nine of the thirteen cases was to give one 25 mg. tablet orally as soon as the patient was in labor, two patients received 10 mg., and one patient 50 mg., and then when the labor progressed to the point of definite progress to add by hypo the combination of 50 mg. Demerol and 1/150 gr. scopolamine. My feeling was that this amount of Demerol would hardly depress the respiratory center of the infant in any case. This proved to be true as there was not the slightest degree of respiratory depression or delay except in one case where the cord had to be quickly severed because of tension about the neck and much mucus had to be aspirated. The infant was perfectly normal after this.

In one case the Thorazine was administered 25 mg. i.m. This was done because nausea prevented the retention of the oral preparation. Blood pressure was followed carefully in this case and there was no change. The other effects were the same as will be described for the other cases.

Clinically the most striking effects produced in the mother by the addition of this agent are pronounced relaxation, the appearance of one as in normal sleep between contractions, excellent rest after delivery for from two to four hours and a remarkable degree of cooperation on the part of the patient even at the height of contraction. Apparently there is some definite degree of amnesia different from that induced by scopolamine alone for there is a lack of wildness on the part of the mother which

*Smith, Kline and French Laboratories

scopolamine so often causes.

The amount of inhalation anesthesia, nitrous oxide-oxygen, was greatly reduced and really not needed in several of the patients.

I have known all of these patients for several years and have attended most of them in previous deliveries. I have the definite conviction that in each case the labor from beginning to end was much smoother than it would have been without the administration of Thorazine.

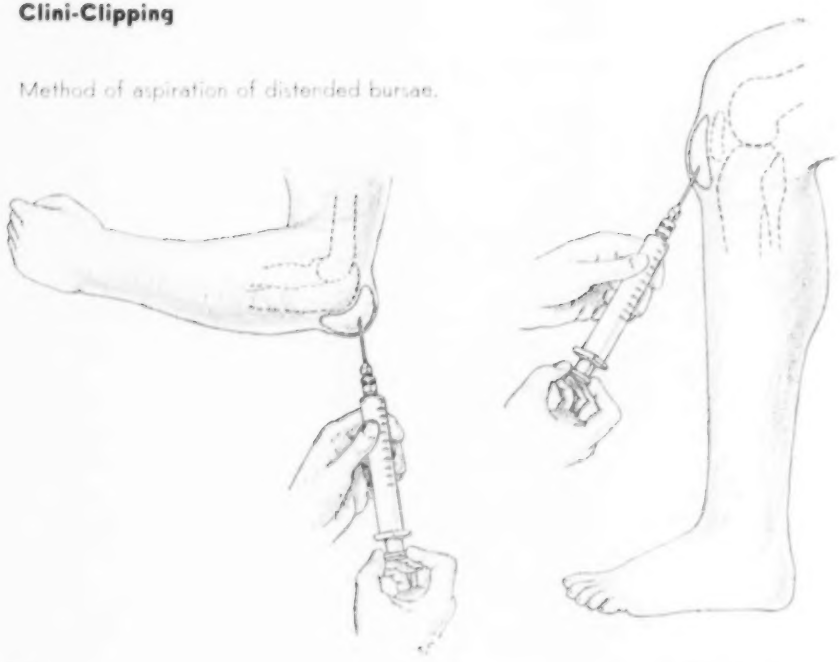
Summary

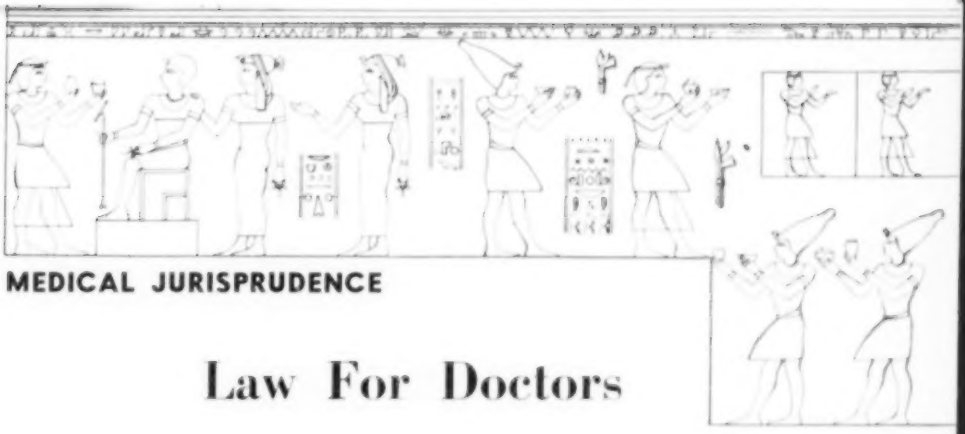
The degree of relaxation obtained and cooperation exhibited by the mother, the small amounts of other drugs required, and the lack of any evidence of respiratory depression in the infant certainly leads me to feel at the present time that Thorazine is a valuable addition to our therapeutic armamentarium in handling obstetric cases.

20 Commerce Street

Clini-Clipping

Method of aspiration of distended bursae.





MEDICAL JURISPRUDENCE

Law For Doctors

GEORGE ALEXANDER FRIEDMAN, M.D., LL.B.
New York, New York

In the Code of Hammurabi (2030 B.C.) who was an early Babylonian King the law of property, crimes, marriage and regulation of medical practice were included. The code made of the doctor a guarantor by imposing upon him strict liability and providing:

1. Liability without fault by imposing a penalty upon the physican for a bad result. If a doctor treated a gentleman for a "severe wound with a lancet of bronze and caused the gentleman to die" —the doctor's hands could be cut off. However, if the doctor caused the death of a slave, he would have to "render slave for slave." Thus the imposed penalty was either penal as retribution or civil as damages.
2. The words "treated or caused" made affirmative medical action the test of liability on the part of the physician. The concept of liability for inaction had not yet developed.
3. Payment by the patient was necessary only in the event of a cure. Amount of fees was regulated.

The Egyptian physician who followed the rules laid down in the sacred books guarded by the priests enjoyed freedom from liability. The application of a new thought or a novel idea was done at the physician's peril. If he caused the death of a citizen by reason of his audacity, he would lose his head. This extreme systematization in all things was reflected in their law which conformed physicians.

Greek physicians were held to the doctrine of strict medical liability. Plutarch[1] related that Glaucus a physician of Ephesus who allowed his patient to go to the theatre was condemned to die by Alexander because the patient died, having imprudently overeaten during the physician's absence.

The lex Aquila 287 B.C. controlled the practice of medicine under early Roman law. There were no formal schools or diplomas since Roman medicine began as a domestic service which was rendered by slaves to their mas-

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The department will invite and welcome letters of comment. Problems which will be considered of general interest will be answered in Medical Times. All of the effort will be directed toward helping the practicing physician to understand and simplify problems.

In the future current cases of interest will be presented.

ters. The law imposed fault upon a physician who having operated a slave abandoned the aftercare and allowed him to die. If error were found to have been committed or the patient died as a result of ignorance there was liability. The doctrine of liability for fault (culpa) began to emerge. The remedy was both penal and compensatory. Expenses could be recovered for moneys paid out for care, the funeral and loss of earnings from the incapacity for work.

Modern Roman law ushered in the doctrine of negligence as a theory of liability. Here, ignorance, lack of skill and failure to attend or care for a patient became actionable. This was in contrast to earlier systems of law which made positive conduct always the criterion of blame. Lack of care emerged as an actionable concept. The law made its influence felt around the thirteenth century in Europe where it blended with the existing systems in Germany, France and Central Europe until they were replaced by the modern codes. Windscheid[2] wrote:

> "Whoever employs the services of a person who makes a profession of the possession of an art or science may, disregarding particular circumstances, pre-suppose that this person has such knowledge and abilities as one might acquire in such art or science by usual industry and conscientious application. There is no right to presuppose particular gifts or the endowment of genius."

Here then is the emergence of the standard of care. The test was by comparison to the average doctor rather than to outstanding talent.

Wurtz,[3] a noted surgeon of Basle, reported that in the middle of the eighteenth century certain cities appointed surgeons for the purpose of examining wounds of patients who had been seriously injured. Their purpose was to see that the attending surgeon had treated the patient properly. Otherwise the patient could sue should it be shown that there had been malpractice. The following case was reported by Denizart:[4]

> "A surgeon sued a patient who had broken his arm for his fee. The arm had either been set badly or too early and having been inconsiderately moved by the patient, gangrene set in. The patient refused to pay the bill. The court then ordered expert surgeons to examine the question as to how the accused had acted and if the operation and his dressings were in conformity to the rules of his art. After having heard the declarations made by both the surgeons and the patient they returned the verdict in favor of the surgeon. As a final consequence the court ordered the patient to pay the surgeon's fee."
>
> "Another case . . . The surgeon was sued in criminal court and was condemned to pay 1500 pounds damage and interest because of ignorance. The findings were approved by the experts called in."

The English Common Law is defined as consisting of those principles, maxims, usages, rules of action which are based on immemorial custom and are enforced by the courts. This law developed along the principles of modern negligence law and is the fore-

runner of the present law in the United States. Soon after the Revolution all the states of the Union provided that the English Common Law would be followed. However, the trial of a civil and criminal procedure in the same action as provided by the early Roman Law was abandoned. Present law gives damages in the form of money to the patient who recovers in a cause of action against a physician.

The practicing physician today is no longer the guarantor of ancient times. The evolution has been from absolute liability to limited liability conditioned upon fault.

Definition of Terms The French word "torquere" which means to twist or turn has given to the law the word "tort." This has come to mean twisted conduct. When a tort has been committed a civil suit in damages may follow if there has been the violation of a legal duty. The latter is a duty which is recognized and sanctioned by the court. A moral duty is distinguished from a legal duty in that the former rests only upon the sentiment of the given time and place.

> "A moral duty exists when one is bound to do or not to do something because of some interest, social, public or private, recognized by the moral sentiments of the community. A legal duty exists when one is bound to do or not to do something because of some interest, social, public or private which the law undertakes to maintain with the power of the state involved in judicial proceedings."[5]

Whenever the sentiment of the community reaches a certain pressure, the court will act to controvert into a legal duty that which until then had been at most, a moral obligation.

Negligence is one of the theories of liability under the heading of Tort. The elements in the cause of action in negligence are:

1. The plaintiff must show a duty imposed upon the defendant to perform for the benefit of the plaintiff as a reasonably prudent man would.
2. The breach of the duty must be established.
3. Proximate cause: there must be a reasonably close causal relation between the defendant's breach and the plaintiff's injury. Would men of average prudence and experience in the exercise of ordinary care have anticipated the accident under the circumstances? Determination is left for the jury.
4. There must be actual loss or damage.
5. In some states the plaintiff must show his freedom from contributory negligence.

Malpractice involves in addition to negligence, an ignorant or wilful departure from approved medical practice. In a celebrated case[6] decided in 1898 the New York Court of Appeals outlined a classical and comprehensive explanatory definition of the concepts of malpractice.

1. "Upon consenting to treat a patient it becomes the physician's duty to use reasonable care and diligence in the exercise of his skill and the application of his learning to accomplish the purpose for which he was employed.
2. "He is under further obligation to use his best judgment in exercising his skill and applying his knowledge.

3. "The law holds him liable for injury to his patient resulting from want of requisite knowledge and skill or the omission to exercise reasonable care or the failure to use his best judgment.
4. "The physician is not required to possess that extraordinary learning and skill which belong only to a few men of rare endowment, but such that is possessed by the average member of the medical profession in good standing in the area.
5. "Still, he is bound to keep abreast of the times and departure from approved methods in general use, if it injures the patient will render him liable however good his intentions may have been.
6. "To render a physician liable, it is not enough that there has been a less degree of care than some other medical man might have shown, or less than he himself might have bestowed, but there must be a want of ordinary and reasonable care leading to a bad result.
7. "This includes not only the diagnosis and treatment, but also the giving of proper instructions to his patient in relation to conduct to be exercised in the use of an injured part.
8. "The rule requiring him to use his best judgment does not hold him liable for mere error of judgment provided he does what he thinks is best after careful examination.
9. "His implied engagement with the patient does not guaranty a good result, but he promises by implication to use the skill and learning of the average physician to exercise reasonable care and to exert his best judgment."

Artificial Insemination

The term AIH connotes artificial insemination by means of the husband's semen (Artificial Insemination Husband) and AID (Artificial Insemination Donor) by means of a donor's semen. The practice upon human beings dates back to 1792. Not until about fifty years ago was there a report of the use of AID.

AID has been likened to adultery on the ground that it brings into the family a child that is not the husband's. A Canadian case[1] held that AID without the consent of the husband was adultery. It has been held not to be adultery[2] because no sexual intercourse is involved.

With AID it is theoretically possible for the child to marry a blood relative in later life. This possibility is increased in a small community.

In a celebrated decision[3] a woman who had conceived by means of AID was given exclusive custody of the child in a divorce action. The husband was denied all rights of visitation because he was held not to be the biological father. An English case held that AIH which resulted in the birth of a child did not prevent the annulment of a marriage because the husband was impotent.

The Catholic Church by means of Papal Declaration in 1897 stated that

artificial insemination is illicit and should not be allowed at all.

In 1941 Drs. Seymour and Koerner sent out 30,000 questionnaires to physicians. Out of 7,642 replies it was reported that at least one pregnancy had been obtained in each of 9,489 women through artificial insemination.[10]

According to Regan[11] the following precautions are to be followed by physicians:

1. The husband's sterility must be established.
2. Consent and authorization of the patient and her husband should be given in writing. The identity of the donor and donee should be kept from each other. There should be written permission from donor to use the semen for purposes of artificial insemination. The consent of the donor's wife should be had.
3. A "pooled" specimen of semen should be obtained containing husband's semen if possible.
4. Koerner has suggested that the surgeon should not be the obstetrician in the same case.
5. The donor should have the same blood grouping, type, and Rh factor as the husband. He should be selected for high fertility. His I.Q. should be high and he should we well adjusted socially. There should be a resemblance to the husband in appearance and personality.

There is a strong presumption in the law that a child born in wedlock is presumed to be legitimate. Since artificial insemination is practiced widely, yet in secret, many legal problems will arise in the future. There is legitimacy, custody, inheritance and property rights.

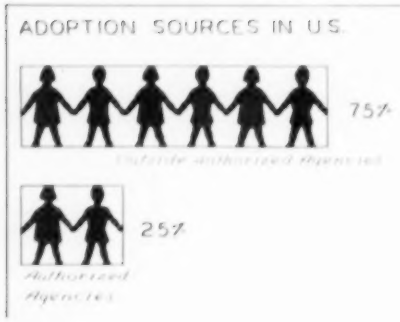
Artificial insemination has no legal status at present. Intelligent legislative action is necessary for the control and direction of this method of begetting children.

Adoption

Since approximately seventy-five percent of babies placed for adoption are accomplished outside the purview of authorized agencies it is incumbent upon the practicing physician to become aware of the legal implications and also of the socio-religious import of the problem.

The creation of the legal status of parent and child between persons not so related by blood is adoption. This procedure is controlled by statute which endeavors to protect the best interests of the child. Whoever places a child for adoption in violation of the statute is guilty of a misdemeanor. Financial gain is the primary motive of those who handle children for adoption in "the black market for babies"; the welfare of the child is secondary. Further there can be no adoption by contract or agreement.

Since religion is an important and fundamental part of a child's development and orphan children need only the more the security and direction that religion affords, adoption agencies have long endeavored to place a child for adoption with parents having the same religion as that of the child. Most legis-



latures have developed a policy which does not favor inter-religious adoption.

In a recent case two sisters aged three and four had been placed for adoption with a woman of different faith from that of the mother who agreed that the children be raised in the former's religion. Four years later after they had been placed for adoption with a family of the agent's religion who were eager to adopt the children the natural mother re-appeared. She demanded their return even though she was unfit to care for the children. The Appellate Division's solicitude for the religion of the children at birth and their mother's charge as to religion ordered them transferred out of the adoptive home to an institution of the religion of their birth.

However, more than half of all adoptions involve illegitimate children. The unwed mother can remain anonymous in illegal agencies. When she proceeds through legitimate channels she is subjected to interrogation, investigation and interviews all of which she wishes to avoid. Further, the possible probing of her religious background increases the possibility of the disclosure of her misfortune. Thus, often her desire to keep her anonymity and her identity a secret transcends all other factors.

Physicians should endavor to guide, if possible, the mother to an authorized agency in the best interests of the child.

Summary

The Babylonians, Egyptians and Greeks made a guarantor of the doctor. The idea of (culpa) fault started in the Lex Aquila of the Romans as the foundation of medical liability. Negligence emerged as a theory under modern Roman law but the defendant could still be prosecuted both criminally and civilly in the same action. This law influenced the later French and German law. The English common law developed along the principles of modern negligence law.

In the United States[12] soon after the Revolution all the states of the Union provided that the English Common law would be followed. However the trial of a civil and criminal proceeding was no longer held in the same action.

The evolution has been from absolute liability to limited liability conditioned on fault.

A Tort is twisted conduct and Negligence is a thory of liability when a Tort has been committed. Malpractice involves in addition to negligence an ignorant or wilful departure from approved medical practice.

Intelligent legislative action is needed for the guidance and control of artificial insemination.

Certain precautions are outlined for the physicians' guidance.

Adoption involves the creation of the status of parent and child between persons not so related. Statutes have been established for the protection of the child's interests. Anyone who places a child for adoption in violation of the statute is guilty of a misdemeanor.

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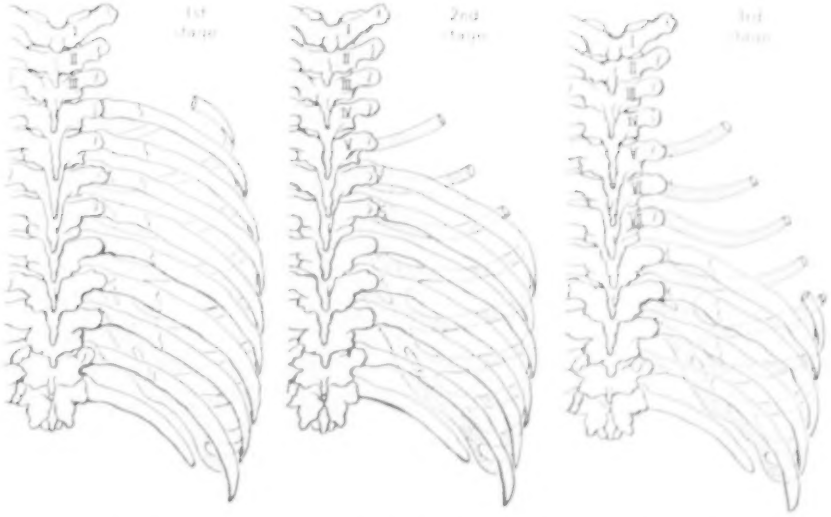
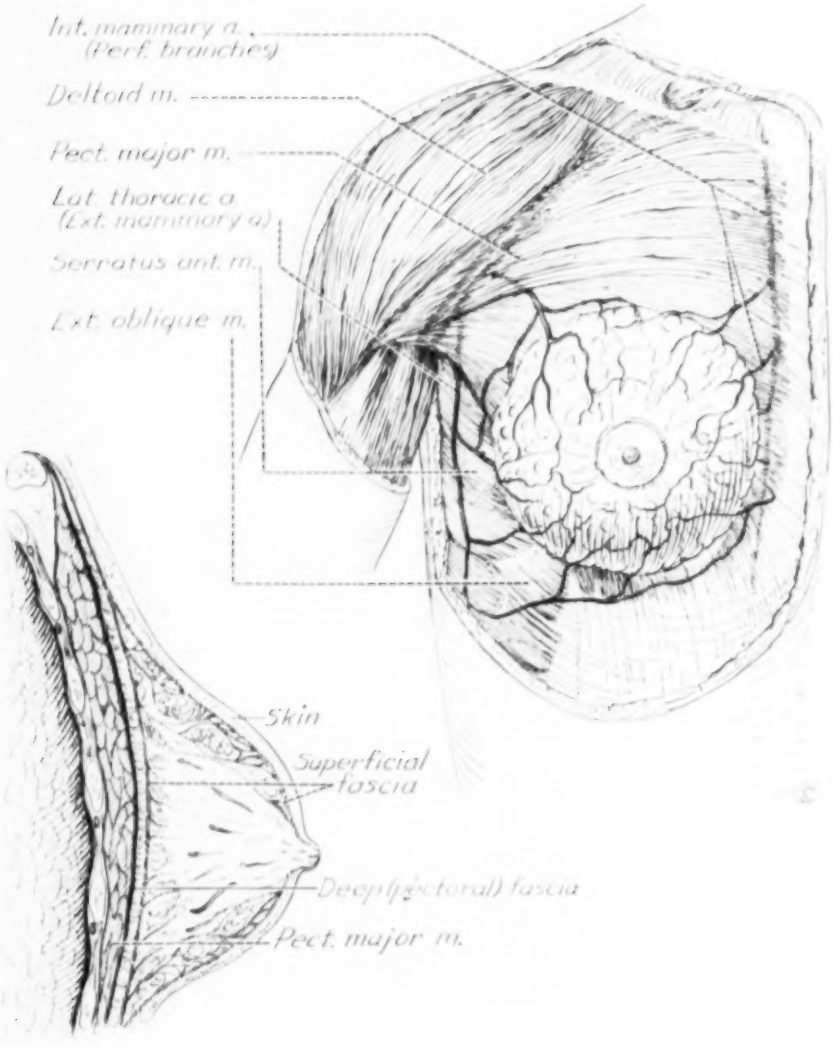
Clini-Clipping



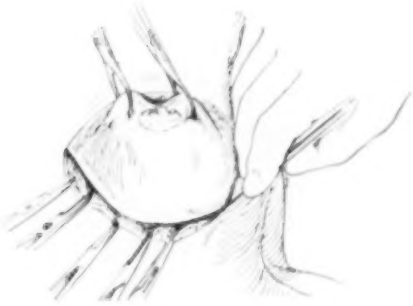
(Radical Treatment) Rib removal in thoracoplasty operation. (after Orr)

Simple Mastectomy



From "Surgical Technigrams," by F. M. Al Ali, M.D., Associate Surgeon, Kings County Hospital. (McGraw-Hill Book Co., N. Y. C.).

1 Prepare and drape operative field. Apply two caliper clamps to horizontal axis of involved breast. Lift breast off chest wall. With point of scalpel, scratch line of incision.



2 Drop breast. Incise skin and subcutaneous fat over upper skin scratch. Clamp bleeding points.

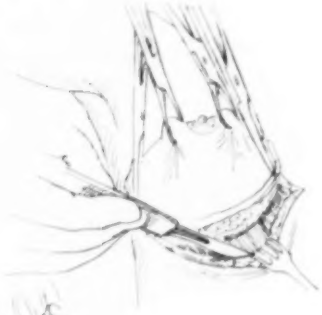
3 Lift breast. Complete incision of skin and subcutaneous fat. This leaves breast attached to pectoral fascia by deep layer of superficial fascia.

4

Clamp angles of breast section. Retract superior skin flap. Dissect it from breast down to pectoral fascia.

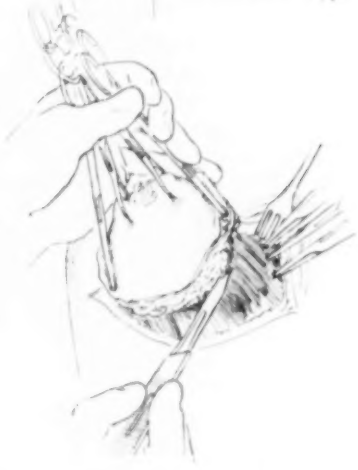
5

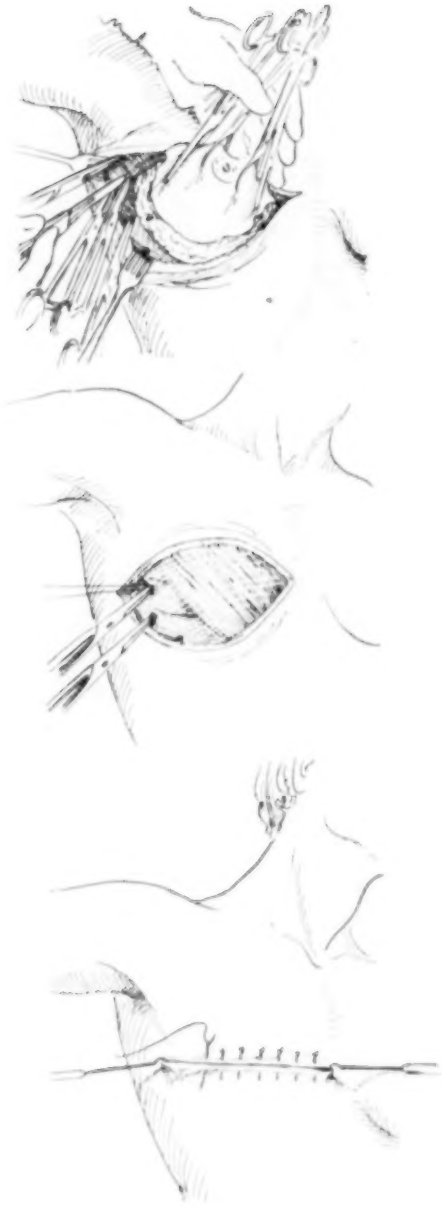
Repeat procedure with lower skin flap. This detaches breast mass from encircling subcutaneous fat and fasciae.



6

Open medial angle of incision. Dissect breast free from underlying pectoral fasciae. Clamp several perforating branches of internal mammary vessels.





7

Open lateral angle of incision. Dissect breast from serratus anterior and axillary fasciae. Clamp severed branches of external mammary vessels.

8

Pack wound with warm pads. Wash gloves. Discard soiled pads. Ligate clamped vessels and secure perfect hemostasis.

9

Approximate skin flap with deep vertical mattress sutures.

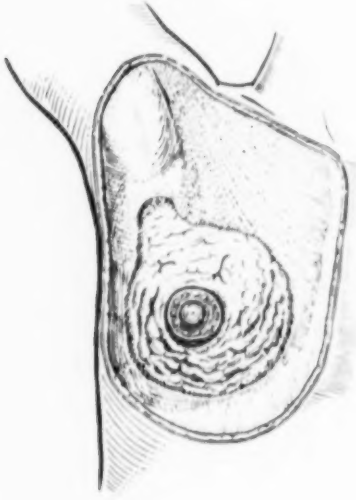
SIMPLE MASTECTOMY NOTES

Anatomy

The *mammary gland* is contained within the two layers of the superficial fascia covering the chest wall, and is devoid of a definite capsule. It is globular in form and is composed of a central glandular mass from which glandular tissue processes radiate into the encircling subcutaneous fat. The gland varies greatly in size and location depending upon the age of the individual and upon the states of function in which the gland is involved. It lies for the most part over the pectoralis major muscle except at its periphery. Laterally the gland extends over the serratus anterior muscle; caudad the gland lies over the digitations of the external oblique muscle.

Occasionally the glandular tissue extends beyond the circumference of the breast mass proper and invades the axilla. When it does, this *axillary tail* perforates the axillary fascia. In such cases the gland lies both above and beneath the deep fascia with its bulk superficial to it. This axillary tail of the gland may be the site of primary growths and frequently is mistaken for lymph nodes.

The mammary gland is supplied by an extensive network of lymphatic vessels, which drain into adjoining and distant lymph nodes both superficial and deep. Its blood supply consists of two main systems which enter the gland at its lateral and its medial aspects. These vessels are perforating in type. Laterally they originate from most of the branches of the axillary artery and perforate the axillary fascia to enter the lateral aspect of the gland. Medially the internal mammary artery gives off perforating branches which penetrate the chest wall to reach the medial aspect of the gland.



Technique

The mammary gland may be removed by several types of incisions. Of these, the transverse incision is cosmetically desirable and anatomically preferable inasmuch as the blood vessels enter the gland at its medial and lateral aspects. The transverse incision has the added advantage that it affords better visualization of the axilla, and in the event that an axillary tail is discovered at operation, the tail may be removed without additional skin dissection.

The skin incision must be well planned before it is made in order to provide adequate flaps to cover the surgically denuded chest wall. To provide adequate skin flaps a preliminary tracing of the incision with a skin

scratch should be made. Should the flaps prove inadequate, they may be undermined as far back on the chest wall as is necessary to permit closure without tension on the suture line.

The breast is supplied by a network of blood vessels derived from the axillary and internal mammary arteries. None of these vessels is of sufficient size to warrant primary ligation. When severed during the dissection these vessels are simply clamped and ligated.

Drainage of the wound is not essential once adequate hemostasis is established. On the other hand, it may be advisable when local anesthesia is employed. The drain provides an exit through which serum is directed out. Otherwise serum may collect beneath the approximated skin edges and ultimately initiate a breakdown of the fresh scar.

Some surgeons approximate the subcutaneous fat and fasciae with sutures preliminary to closure of the skin. Others, conscious of the possibility of subcutaneous fat necrosis, omit this step and depend upon the skin sutures to establish all necessary approximation.

The incision may be dressed with a few layers of petrolatum jelly gauze, which will prevent the dressing from adhering to the sutured wound. When it is time for suture removal, the dressing may be peeled off with ease. The suture thread remains soft and pliable and not incrusted with dried blood or serum. When removed, the thread pulls through without much discomfort to the patient or traction on the healing wound.

A scar is the seam which welds the cut edges of a wound together. Both for surgical and for cosmetic reasons the skin scar should be as fine as possible. To achieve this result, accurate approximation of the open surfaces is essential. Stress is laid on precise coaptation of the cut dermis and the obliteration of all subcutaneous dead spaces. If properly introduced, the vertical mattress suture admirably serves both purposes and produces excellent end results.

Clinico-Pathological Conferences

New York University-Bellevue Medical Center Post Graduate Medical School, Department Of Medicine at Bellevue Hospital, Fourth Medical (N. Y. U.) Division

PATIENT W. S.

A 49-year-old white policeman admitted 7/10/53 with a: Chief complaint —"Severe shortness of breath—1 week."

Present Illness—The patient's history begins in 1949 when he first experienced substernal pain on exertion with radiation to left hand. An electrocardiogram taken at that time was reported as negative but he was placed on one month's bed rest with relief of symptoms until three months prior to admission. At that time, he developed a crushing substernal pain which persisted for several hours. Electrocardiograms were interpreted as consistent with recent myocardial infarction and at that time he was told of diabetes mellitus. After four weeks bed rest, he gradually returned to mild activity while taking 1 Digoxin pill every other day and an injection of mercurial diuretic weekly. Over the ensuing weeks until admission, he noticed progressively increasing dyspnea with the slightest effort, some swelling of the ankles and the need to sleep upright. Substernal pain with radiation to left and right hands was a frequent complaint though this pain did not persist.

Past History—Stated to be non-contributory.

Social—Married with 2 grown children. Wife was an irritating and nagging female who frequently contributed to patient's cardiac symptomatology.

Habits — Cigarettes — 2 pkgs/day. Moderate drinker of whiskey, never to point of drunkenness. Unable to follow diabetic diet as prescribed by private physician.

Review of Symptoms—Stated to be negative aside from P.I.

Physical Examination—T. 100.4 R, P. 100, R. 24, B.P. 135/75, R.A.S. Wgt. 150 lbs.

A well developed, well nourished, apprehensive and dyspneic white male neither cyanotic nor orthopneic.

Skin and Mucosa—Skin pale and

moist. Turgor good.

Head E.E.N.T.—Pupils, react to l and a. No lid lag or exophthalmos. Fundoscopic narrowing of arterioles and fullness of veins without nicking, hemorrhages or exudates.

Chest—Symmetrical. Breath sounds normal. Fine moist rales at both bases. No abnormalities of percussion note.

Heart—Heart not enlarged to percussion but p.m.i. felt 2 cm. beyond the m.c.l. in the 6 i.c.s.; diffuse in nature. No murmurs heard. Sounds of poor quality. Occasional extrasystoles heard.

Abdomen—No organs felt. No fluid wave, tenderness or masses elicited.

Extremities—Edema 1 plus of ankles. Pulses felt bilaterally.

Neurological—Sensory—Reduced sensation to light touch and pain in the right hand.

Glands—No palpable enlargement.

Rectal—Not done.

Hospital Course—He was placed on Digoxin 0.25 mgms. o.d., Phenobarbital 0.03 gms. t.i.d. and Aminophyllin Tablets 0.3 gms. t.i.d. Thiomerin 1 c.c. on the average of twice weekly.

7/13—B.P. 90/65 in the a.m. and 100/70 in the afternoon. Skin cool and clammy, profuse perspiration. Rested comfortably with chloral hydrate. T°—99-102° daily.

7/17—Digoxin 0.25 b.i.d. begun. Extremely sensitive carotid sinus mechanism noted. Numerous premature systoles. Moist rales at both lung bases.

7/21—Patient found semi-conscious, cyanotic, dyspneic (rate 40/min), bilateral wheezing and rales in lungs in

Laboratory

Urine 7/16—Normal. S.G. 1.016.

Blood

Date	Hb.	RBC.	WBC	Tr	P	L	M	E	ESR	HCT
7/11	14.5	4.91	15.0	8	63	22	6	1	1	46
7/13	16.	5.1	9.3						5	48
7/22			15.6						6	54
8/4			9.4	1	60	34	2	3	14	50
8/21			10.5	3	67	25	4		30	47

N.P.N.—28 mgs. %—7/13
Sugar—151 mgms. %—8/3
Mazzini—Negative
Stool Guaiac—negative 7/11

Electrocardiograms.

April 1953—Private M.D. Myocardial infarction—atypical anterior with signs of recent origin.
June 1953—T1 less inverted and RT depression less marked. Increased inversion of T in V4.
7/17—1953—Bellevue—Non-specific flattening of T waves in 1, AVL, V5 and 6 which require clinical evaluation. Occasional P.v.c. Rate 92.
8/1—1953—Bellevue—ST segments more elevated since previous tracing. R wave in V4 decreased in size and ST segments in V5 and 6 more depressed. Changes suggest recent anterior wall infarction.
Chest X Ray—7/24—Cardiac contour markedly enlarged in all diameters. Straightening of left cardiac borders. Lung fields show more than moderate evidence of congestion bilaterally.
Radioactive Iodine Uptake—8/4 40 millicuries I.v. Uptake 40% Euthyroid.

lower portions. Patient complained (when able) of pain in the chest. Measures for pulmonary edema markedly improved his state. T° 99-102°R daily.

7/22—General condition deteriorated since attack above. Pulses rapid (125/min), frequent extrasystoles, increased cyanosis and dyspnea. Digoxin increased to t.i.d. dosage. Procaine penicillin 600,000 u daily begun.

7/23-7/29 — General improvement. Pulse still rapid—80 to 100/min. but rales at lung bases cleared and cyanosis cleared.

8/10 — Up in wheelchair though breathless with any exertion. Some nocturnal dyspnea and orthopnea. T—100-100.5-99 R.

8/19—Slight hemoptysis and pain in the right chest. T-102.8 last night.

8/21—Hemoptysis continued. Cyanosis marked. Markedly distended neck veins with markedly positive hepatojugular reflex.

8/23 — Patient complained of dull mid-epigastric pain and was faint and dyspneic. Liver felt 4 fingers breadth below right costal margin and tender. Fine moist rales both lung bases and heart sounds of very poor quality. B.P. 105/75.

8/24—Patient was on bedpan and suddenly slumped over and was unresponsive, and was pronounced dead.

Pathological Findings

At autopsy a major branch of the right pulmonary artery was occluded by an embolus. The portion of lung served by this vessel contained no infarct. However smaller emboli which were associated with corresponding infarcts, were found in both lower lobes and the right middle lobe. The larger embolus was probably the immediate cause of death; death occurred too soon for an infarct to become manifest. Sudden death under these circumstances is thought to be due to the sudden dilatation of a major pulmonary artery by the lodging of the embolus, rather than to the elimination of part of the blood flow through the lung.[1] The infarcts which resulted from previous embolization were undoubtedly the cause of the hemoptysis which occurred five days before the patient died.

A moderately large area of healed infarction was found in the anterior septum and the apex of the left ventricle. There was a mural thrombus overlying this area. The state of organization of the infarct suggested that most of it was at least four months old (corresponding with the patient's initial clinical episode of infarction). Within this area there were smaller foci of more recent infarction; these probably occurred at the time of the clinical episode one month prior to death. In addition there were many smaller areas of fibrosis throughout the left ventricle myocardium. These undoubtedly represented small healed infarcts which may have taken place at any time during the four year history. No thrombi were found in the coronary arteries, but they were virtually occluded by severe atherosclerotic changes at several points.

The patient's heart was markedly hypertrophic (740 grams.). This degree of hypertrophy is unusual in atherosclerotic heart disease without hypertension.

When it is found, it is usually in association with a long history of cardiac failure.[2] The severe chronic passive congestion of the liver found in this patient confirmed the fact that he had had considerable cardiac decompensation.

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PATIENT J. F.

Second admission of a 67-year-old white female with a: Chief complaint "Nausea and vomiting—3 weeks". "Lump in substernal and epigastric region—3 weeks". "Diffuse low abdominal pain—2 weeks". "Dizziness with exertion—1 month."

Previous Admission—1949. Similar complaints—? diagnosis. Admission for one day. Symptoms subsided in one week.

Present Illness—This 67-year-old widowed woman was forced to leave her job as a cleaning woman one month prior to admission because of dizziness with ordinary exertion. She fell to the floor on one occasion because of the dizziness. No other central nervous system symptomatology.

Three weeks prior to admission, she began to notice a sensation of a lump in the lower substernal area and upper mid-epigastrium immediately after eating. This was associated with the vomiting of undigested food immediately afterwards. There was progressive inability to eat solid foods until at the time of admission, only cereals and liquids could be eaten. There was no associated pain, no hematemesis, no noted jaundice, no change in urine or stool color. Concomitantly there was diffuse lower abdominal cramping pains with a desire to defecate. This cramping was relieved by licorice powder. Bowel movement normally occurred 1 x week but recently was more frequent. Stool caliber was diminishing. Weight loss definite but of an undetermined amount.

Review of Symptoms: Cardio Respiratory—A cough for two weeks with the expectoration of mucoid sputum. Pain in the submanubrial region with coughing. Moderate exertional dyspnea but no orthopnea. No edema.

Genitourinary—Nocturia-2x.

E.N.T.—Edentulous for five years, no dentures.

Past History—No other hospitalizations other than mentioned.

Occupation — Cleaning woman. Denied exposure to noxious vapours.

No drugs, cigarettes or alcohol.

Family History — Denied cancer, tuberculosis, diabetes, cardiovascular disease. Mother and father died of old age.

Physical Examination—T. 99 R, P. 104, R. 22, B.P. 132/96 R.A. Standing.

A thin elderly white female alert and cooperative with evidence of recent weight loss.

Skin—Turgor poor, inelastic. Numerous hemangiomata and nevi.

Eyes—Conjunctivae pale. Fundi not noted.

Tongue—Moist and coated.

Neck—Supple, no nodes felt. Veins flat.

Chest—Emphysematous.

Lungs—Rhonchi at left base. No rales heard.

Heart—Not enlarged. N.S.R. A2 equals P2.

Breasts—Atrophic, symmetrical. No masses or tenderness.

Abdomen—Soft and flabby with poor turgor. Slight tenderness and guarding in upper mid-epigastrium. No masses felt. No liver, kidney or spleen felt. Bowel sounds present.

Lymphatics—No adenopathy felt.

Extremities—No edema. Vessels sclerotic and pulses present. No clubbing.

Pelvic—Senile uterus, cervix patulous. Adnexa normal.

Rectal—Good sphincter tone. Feces brown. Guaiac test negative.

Neurological—Physiological.

Hospital Course: The patient was able to retain fluids only up to the time of surgery. The hospital work-up included: gastric analysis with histamine stimulation—no free HCl, gastric aspirate positive with benzidine, esophagoscopy revealed a beefy, red, hemorrhagic mass at the cardiac end of the esophagus but the pathological report revealed only normal gastric mucosa which was considered to be redundant mucosa, gastro intestinal. #1 reported a defect at the lower end of the esophagus and upper stomach, chest x-ray revealed an infiltrate at both lung bases with a report of possible metastatic involvement. The patient was operated upon on the 12th hospital day.

Laboratory Results

1/18	Hb. 11.0, R.B.C. 4.0 M.
1/19	Fastine Blood Sugar, BUN, CO2 C.P., Protein A/G, Cholesterol and Esters, Icteric Index, Cephalin Flocculation, Bilirubin, Amylase, Prothrombin Time—All within normal limits.
1/19	Alkaline Phosphatase—6.3 Bodansky Units (Normal up to 5).

Two stool guaiacs—negative.

Pathological Findings

Autopsy revealed the cause of this patient's symptoms to be an *adenocarcinoma of the cardia of the stomach.* Metastases were found in the liver, peritoneum, lungs, diaphragm, pancreas, spleen and adrenal, and in mediastinal mesenteric and retroperitoneal lymph nodes. The chest x-ray was interpreted

as being suggestive of lymphangitic spread of tumor; this was confirmed at autopsy; while the most characteristic mode of metastasis of carcinomas in general is via lymphatics[1] the secondary tumors usually proliferate to such an extent that their relationship to lymph vessels becomes unrecognizable. In this case, many of the metastases were found to be confined to the lumina of lymphatic channels.

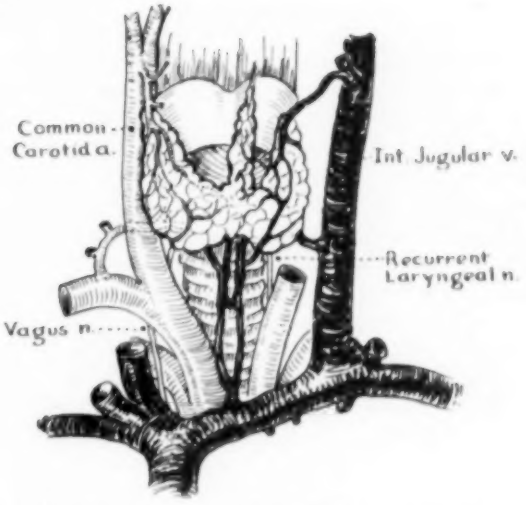
The patient also had acute hemorrhagic cystitis, ureteritis and left pyelitis. Hemorrhagic cystitis is a fairly common complication of many debilitating diseases.

Reference

1. R. A. Willis. The spread of tumors in the human body. 1952, C. V. Mosby Co., St. Louis, Mo.

Cases presented from the wards of the Fourth Medical Division, Bellevue Hospital, Dr. Charles Wilkinson, Dir.

Clini-Clipping



Blood and nerve supply of the thyroid gland.

Management of Minor Lacerations of the Face

Minor lacerations of the face are often handled in the physician's office, or hospital emergency room. Meticulous care in the primary closure of these injuries will be rewarded by minimal reaction and fine scars. This is of paramount importance in facial wounds, where the cosmetic result is of understandable concern to the patient.

Wound Healing The basic principle behind wound closure is the approximation of healthy viable tissue in such a manner that the normal process of healing can proceed unobstructed. The healing of wounds can be thought of as a triphasic phenomenon. The initial phase, known as the lag period, lasts about four days, under ideal circumstances. Wound strength during this period is dependent upon the suture material, except for the cohesiveness of the fibrin clot between the wound edges. During this lytic, or inflammatory phase, dead tissue is removed in preparation for the next stage, that of cellular proliferation. This involves fibroplasia, endothelial budding, and epithelial regeneration. Fibroblasts invade the fibrin clot, endothelial buds create granulation tissue, and epithelial cells bridge the surface defect. The wound rapidly gains strength from the fifth day on. The final phase of wound healing involves scar tissue contraction. With the maturation and shrinkage of collagen fibers the scar gradually becomes less vascular, paler, and smaller. This settling period requires about six weeks for completion.

Local Factors Influencing Wound Healing With this abbreviated picture of wound healing, we can now consider some of the local factors which influence and alter these various phases. Dead or devitalized tissue prolongs the lag period in proportion to the amount present. Death of tissue may be the result of the original trauma, the crushing effect of injudiciously used instruments, strangulation by mass hemostatic ligatures or tight sutures, or subsequent infection. Accurate approximation of the wound edges without tension reduces the healing area to a thin plate, extending from the surface to the depths of the wound. This is the ideal situation for unobstructed healing. If dead space is left it becomes filled with blood. The resultant hematoma must then be organized, liquefied, and absorbed. This markedly increases the inflammatory reaction and edema of the surrounding tissues. Foreign bodies

in the form of suture material, or particulate matter, delay healing in the same fashion. It should be remembered that there is a normal inflammatory edema following any wound closure, which converts loose sutures into snug ones, and tight ones into strangulating ones. This is particularly important in cutaneous sutures, where undue tension results in permanent stitch marks, which are especially undesirable on the face.

Tension on the wound edge should be relieved as much as possible throughout the entire period of healing. As pointed out previously tight sutures delay the first phase by strangulation and tissue death. During the second and third phases, scars can widen appreciably under the normal pull of the facial musculature. After sutures have been removed the wound should be splinted by transverse strips of gauze fixed to the skin with collodion, or adhesive tape. (Figure 1) Although seldom practical, ideally these splints should remain in place until the period of contracture is complete. This secondary spreading of scars is most manifest in wounds which are perpendicular to Langer's lines, the lines of normal skin tension. These lines parallel the wrinkle lines in the face, and can be easily visualized by having the patient make exaggerated facial expressions. Hypertrophic and keloidal scars also have a greater tendency to form in wounds which transect Langer's lines.

Principles of Facial Wound Closure There are certain basic principles which must be adhered to in the repair of facial wounds. The most important of these is that of "atraumatic technique." This begins with the cleansing of the wound. Exposed tissue should be covered with sterile sponges, then the surrounding skin shaved, and washed with surgical soap (pHisohex, pHisoderm, G11, tincture of green soap, etc.) and a dilute noncaustic skin anti-

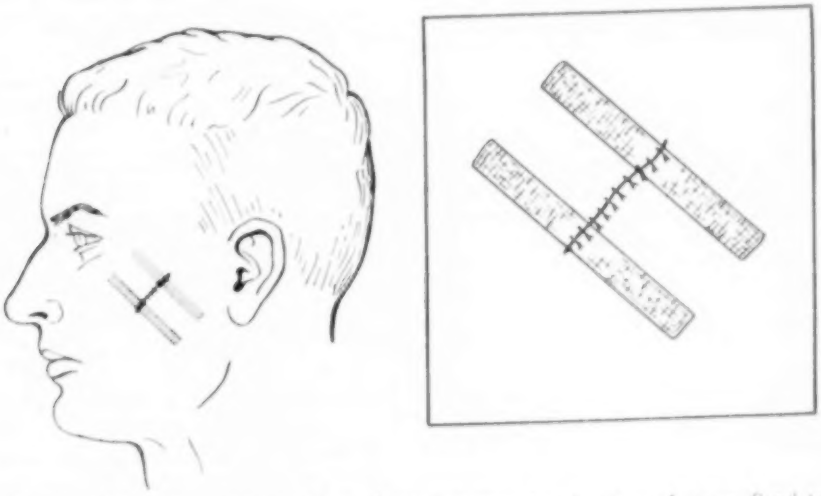


Fig. 1 and 1a. Transverse splinting of sutured wound with strips of gauze fixed to the skin, under tension, with collodion.

septic. (Merthiolate, Zephiran, Metaphen, etc.) The wound is then irrigated with copious amounts of sterile saline, and lightly rubbed with moist cotton, if necessary. Particulate matter is meticulously picked out, to prevent traumatic tattooing. The blood supply to the skin of the face is exceedingly good. Consequently flaps of skin which would slough in other areas of the body may survive on the face, if handled gently and carefully. This precludes the use of heavy forceps which crush and devitalize even normal tissue. Skin edges should be held by skin hooks, or at the most, lightly applied fine toothed forceps. Debridement should be carried out judiciously, but with reticence. If bleeding is noted from the edge of questionable tissue, it should be conserved. Obviously devitalized tissue should be removed by sharp dissection. The use

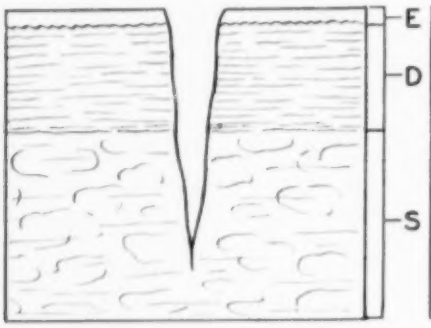


Fig. 2. Cross-section of wound before suturing. **E.** Epidermis, **D.** Dermis, **S.** Subcutaneous tissue.

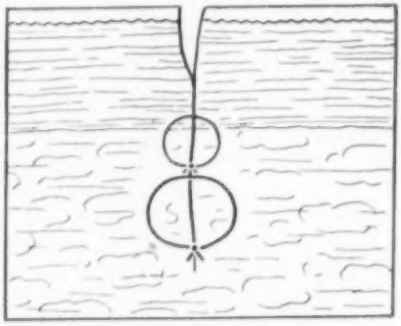


Fig. 3. Subcutaneous and deep dermal sutures, of fine material, tied so that the knots are buried.

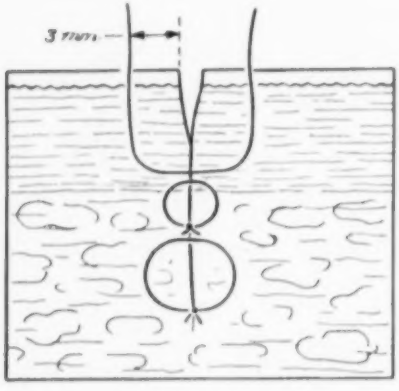


Fig. 4. Correct placement of cutaneous suture.

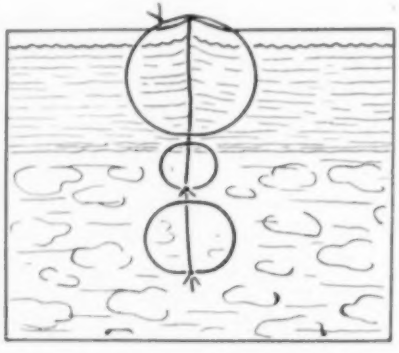


Fig. 5. Slight eversion of wound edges produced by rectangularly placed cutaneous suture.

of scissors is contraindicated, since they function by crushing and shearing, leaving a margin of devitalized cells in their wake.

Hemostasis should be accomplished by accurately applying fine mosquito clamps to the bleeding vessels, including a minimal amount of surrounding tissue; 0000 or 00000 plain catgut is used for ties. Dermal bleeders may require nothing more than temporary clamping. By this approach the amount of strangulated tissue and foreign material is kept at a minimum.

All tension should be carried by the subcutaneous and deep dermal stitches, so placed that the skin edges all but fall together. The cutaneous stitches then serve only for accurate final level approximation. Whenever there is loss of substance tension should be lessened by undermining the wound edges on either side for a distance equal to the width of the defect. If this is appreciable, the wound should be closed in the operating room. In children especially, better results can be obtained under general anesthesia. Whenever possible, closure is performed parallel to the wrinkle lines; however, any revisionary procedures should be reserved for the operating room.

Suture Technique In the face, through and through or continuous stitches are violations of the principle of atraumatic technique. Closure is performed in layers. The subcutaneous tissue is approximated by interrupted vertical sutures of 000 or 0000 chromic catgut, so placed that knots are deep. (Figures 2 and 3) if the wound edges still gape, another layer of interrupted 0000 plain catgut sutures may be placed in the deep dermis. The needles used should be small, sharp, curved, and of size proportional to the suture material; 0000 to 000000 silk, nylon, or dermalon should be used in the skin. Of these materials, silk is probably the most easy to work with, but the synthetic products cause less tissue reaction. The needle is passed perpendicularly through the full thickness of skin three millimeters from the wound edge, then across the wound and up through the opposite edge in a similar fashion. This results in a rectangular course of the suture, which is converted to a circular course when the suture is tied. In this fashion the wound edges are slightly everted. (Figures 4 and 5) Alternate interrupted vertical mattress stitches may be used, if eversion is not satisfactory. Sutures should be placed five millimeters apart to produce accurate approximation. By supporting the wound with collodion gauze strips, one half of the stitches may be removed on the third day, and the remaining ones on the fifth day.

Summary

The closure of minor wounds of the face should be performed with the basic principles of wound healing in mind. Atraumatic technique, fine suture material, accurate layer closure, and prolonged splinting of the wound, all contribute to the formation of acceptable scars.

EDITORIALS

Voluntary Control Versus Marx

The Washington Administration's decision in favor of voluntary control of distribution of the Salk poliomyelitis vaccine was a great disappointment to the promoters of the omniscient and omnipotent State. These gentry are tireless and implacable propagandists who never miss a chance to promote the all-powerful State idea. The Salk vaccine issue was a made-to-order opportunity not to be missed.

It is reason for gratification that this issue arose and that it has been settled promptly and properly. This has been a splendid proof of the basic soundness of the American way of doing things. So long as that system endures there is no likelihood that totalitarian policies will ever get "a foot in the door."

Ave Antibiotics!

The death-dealing diseases of the era preceding the introduction of the antibiotics—like pneumonia and mastoiditis—are virtually in process of extinction so far as the dealing out of death is concerned. Another phase of the beneficence of the antibiotics has been the cutting down of time lost in convalescence from the acute infections.

The American Heart Association is at work on a special project which aims at nothing less than the elimination of rheumatic fever in children, with its consequent cardiac sequelae, through the checking of the streptococcal infections which usually precede rheumatic fever and rheumatic heart disease, and prophylaxis against streptococcal infections to prevent rheumatic recurrences.

We salute the producers of the antibiotics!

After Penicillin, What?

It is an unpleasant fact that the development of science has tied in definitely with war. If gunpowder had not been

discovered and artillery invented, according to noted students of the matter, experimental science would have lagged. "War has always given science an impetus."

As regards medical science, one has only to consider penicillin. It was in an atmosphere of war that this boon appeared to make modern war, in its terrible aspects, more feasible.

Wars now impending and to come will bring the creation of agents more effectual than penicillin by far. Without war, progress will slow down in regrettable degree. This viewpoint by no means condones war, which for many reasons is the most unjustifiable of activities in the eyes of medical humanists.

Uric Acid, Alleged Asset

Dr. Egon Orowan of the Massachusetts Institute of Technology thinks that the uric acid in man's blood stream is a brain stimulant that accounts for his intellectual rise as compared with conditions in all other animals, which break down their uric acid by oxidation into allantoin. This is a plausible theory since the so-called uric acid group of purine derivatives, like caffeine, are known to stimulate the brain.

Without such a resource, Dr. Orowan does not believe that man would ever have amounted to much, since he is not naturally addicted to work.

Such a theory calls for careful evaluation. There have been many such interesting conceptions which have never been actually proven, like the idea which once prevailed about the thyroid gland, carried to the point where it was argued seriously that the consummate skill with which Napoleon planned, and energetically carried out, the nearly successful Waterloo campaign, was activated by the supernormal performance of his thyroid gland.

Perhaps clinicians are too much in the habit of thinking about uric acid almost solely in terms of pathology.

"MEDICAL TEASERS"

A challenging crossword puzzle for the physician

page 41a

PEDIATRICS

JOHN T. BARRETT, M.D.*

Use of a Quadruple Sulfonamide Mixture in Acute Bacterial Infections of Infancy and Childhood

A. D. Ferguson and associates (*Journal of Pediatrics* 45:655, Dec. 1954) report the use of a combination of four sulfanilamide derivatives in the treatment of 21 cases of common acute infections in infants and children. The sulfonamide mixture contained sulfadiazine, Sulfapyrazine, sulfamerazine and Sulfamethazine. The initial dose of this mixture was 0.1 Gm. per kg. body weight, and thereafter 0.25 Gm. per kg. was given every six hours until the rectal temperature became and remained normal for twenty-four to thirty-six hours, and the patient showed definite clinical improvement. The cases treated included 4 cases of bronchopneumonia and 5 cases of lobar pneumonia, as well as cases of tonsillitis, pharyngitis and otitis media. The organisms cultured from the nasopharynx prior to beginning treatment included pneumococcus, streptococcus, staphylococcus and *N. catarrhalis*. The patients had been ill for three to ten days (average four days) before treatment with the sulfonamide mixture was begun. The temperature fell to within normal limits on an average of 2.4 days after the treatment was begun; improvement in symptoms and in physical findings was noted within twenty-four hours. There was no evidence of toxic or allergic reactions to the drug in any case. In spite of the introduction of antibiotics, the authors are convinced that the sulfonamides are often useful in the treatment of infections in children, because they are more easily administered to children and are "less likely to alter the intestinal flora" and thus produce gastrointestinal disturbances. They are also "less costly" than penicillin and broad-spectrum antibiotics.

Barrett

COMMENT

Many of us are falling back on the sulfonamides because of Ferguson's reasons. We find the newer drugs extremely effective in many cases but with certain disadvantages that can be distressing. This is possibly less so in the treatment of children but definitely a threat. Triple sulfas or quadruple sulfas —there is probably little difference.

J.T.B.

Acute Endocarditis in Infancy and Early Childhood

Duncan Macauley (*A. M. A. American Journal of Diseases of Children* 88:

*Active Staff, R. I. Hospital, Providence Lying-In Hospital, C. V. Chapin Hospital, Pawtucket Memorial Hospital; Consulting Staff, Westerly Hospital.

715, Dec. 1954) reports a case of acute endocarditis, as shown at autopsy, in an infant who died when thirty-five days old. Further study of autopsy material from a large hospital for babies in England showed 13 cases of acute endocarditis in 1501 autopsies on children under two years of age, an incidence of 0.86 per cent: a report from an infants' hospital in Boston, Mass. shows an incidence of 0.7 per cent of acute endocarditis in autopsies on children under two years of age. A review of the literature showed 96 other "pathologically proved" cases of acute endocarditis in this age period. A review of all the reported cases shows that acute endocarditis is a rare disease in children under two years of age but "not as rare as some authors have claimed." Rheumatic fever is rarely a cause of acute endocarditis in this age period; infection of almost any type may cause inflammation of the valves of the heart, and while the cases reported are those in which the diagnosis of acute endocarditis was made only at autopsy, the author suggests that "an undiscovered endocarditis" occurring during acute infection in infancy which was not fatal may account for some cases of damage to the heart valves in later life when there is no history of rheumatic fever.

COMMENT

This is an interesting paper pointing out a possible explanation for signs of valvular heart disease. Pathologically it is quite conceivable that any infection, severe or otherwise, may cause endocarditis or myocarditis.

J.T.B.

Aminophylline Poisoning

V. J. Rounds (*Pediatrics*, 14:528, Nov. 1954) reports 6 cases of aminophylline poisoning in children three years of age or younger; one of these cases was fatal, due apparently to respiratory paralysis resulting from spasm of the diaphragm. All the other patients recovered. There are three types of toxic reaction to aminophylline: excessive stimulation of the central nervous system, gastric irritation with vomiting, disturbances of renal function. All of these toxic reactions occurred in the six cases reported. In 3 of these cases the aminophylline was given by suppository, and a study of the type of suppository used indicated that the dosage was probably excessive; in the cases in which the aminophylline was given by injection, the amount of the drug was not presumed to be excessive, but the onset of toxic symptoms indicates that the dose administered was too large, considering the age of the child. Individual sensitivity or idiosyncrasy may have been a factor in some of the reactions noted, but in the author's opinion, this was not "a primary factor." In pediatric practice, the author advises that "more caution should be exercised in using aminophylline, especially with regard to dosage," and the physician should be alert to note any of the signs of aminophylline poisoning.

COMMENT

Aminophylline is not a drug which can be given indiscriminately without thought to possible severe side effects. As Rounds points out, they may be fatal. Aminophylline is quite effective but proper dosage is important.

J.T.B.

The Treatment and Prevention of Epidemic Infantile Diarrhea Due to E. Coli O-111 by the Use of Chloramphenicol and Neomycin

W. E. Wheeler and Bertha Wainer-

man (*Pediatrics*, 14:357, Oct. 1954) report the use of chloramphenicol and of neomycin in the treatment of epidemic infantile diarrhea due to *E. coli* O-111; it has been found that this organism is highly pathogenic for human infants with a tendency to spread to infant contacts. Chloramphenicol and neomycin were used in the treatment of infants with diarrhea due to this organism; both antibiotics were given by mouth in a few cc. of water, four times a day; the total daily dose of chloramphenicol was usually 35 mg. per kilo, and of neomycin, 50 mg. per kilo. Vitamin K was also given. In the first cases treated with chloramphenicol, symptoms were promptly relieved, and the *E. coli* O-111 disappeared from the stools in most cases, but drug-resistant strains developed, which resulted in cross-infections that could not be controlled with chloramphenicol. In infants treated with neomycin, the clinical response was equally good and no drug-resistant strains were found, and no cross-infections occurred. In most cases the neomycin therapy was continued until the patients left the hospital, i.e., for two or three weeks. This indicates, in the authors' opinion, that with neomycin, bactericidal, rather than bacteriostatic, concentrations of the drug are obtained in the intestines and thus the development of drug-resistant strains is prevented; and that, therefore, neomycin has "theoretical as well as practical advantages" over broad-spectrum antibiotics in this type of infantile diarrhea.

COMMENT

An interesting study of use of antibiotics in a highly infectious and severe intestinal ailment.

J.T.B.

Bleeding Lesions of the Gastrointestinal Tract in Infants and Children

J. R. Hodgson and R. L. J. Kennedy (*Radiology*, 63:535, Oct. 1954) report on the causes of gastrointestinal bleeding in 246 infants and children as shown by the x-ray examinations at the Mayo Clinic. While "the astute pediatrician" is often able to judge accurately the source of the bleeding on the basis of the clinical and physical findings, the x-ray examination is of definite value in such cases as showing the exact location and the appearance of the lesion. As there are often differences in the etiology of gastrointestinal bleeding in children of different ages, the cases in this series were divided into three age groups: group I, children less than two years of age; group II, children two through six years of age; group III, children seven to fifteen years of age. In the first group, children less than two years of age, the most common cause of bleeding was found to be intussusception; next in frequency as causes of bleeding were Meckel's diverticulum and volvulus. No cause for the bleeding could be found in 4 cases in this age group. In the second group (two through six years of age), the most common cause of the bleeding was found to be polyps of the colon (in about 37 per cent of these cases); chronic ulcerative colitis was next in frequency (about 14 per cent); Meckel's diverticulum was demonstrated in "a little less than 10 per cent" of this age group; duodenal ulcer was found in 4 cases; in 10 cases in this group no cause for the bleeding was demonstrated, and in 5 of these cases in which exploratory operation was done, no lesion that was the source of the bleed-

ing was found. In the oldest age group, seven through fifteen years, the most common cause of bleeding was chronic ulcerative colitis (in 81 of 120 cases); this high incidence of ulcerative colitis is probably due to the fact that many patients with ulcerative colitis are referred to the Clinic and that gross bleeding is characteristic of this disease; the next most frequent sources of the bleeding were (in order of frequency) polyps of the colon, varices of the esophagus, Meckel's diverticulum and duodenal ulcer.

It is noted that roentgenological diagnosis of lesions of the gastrointestinal tract is much more difficult in infants and younger children than in this older age group, owing to technical problems, and that this "offers a challenge to the diagnostic roentgenologist."

COMMENT

The problem of gastrointestinal bleeding is a vexing one to the pediatrician as well as others. Fortunately malignancy is a rare occurence. This paper is an excellent one in helping the physician statistically to evaluate the child. The finding of an incidence of 67.5% of ulcerative colitis in the 7-15 year old group is rather startling.

J.T.B.

Continuous Therapy of Nephrotic Syndrome in Children with Corticotropin Gel

A. J. Merrill and associates (*A. M. A. Archives of Internal Medicine*, 94:925, Dec. 1954) report the treatment of 25 children with the nephrotic syndrome by continuous treatment with corticotropin gel. In most cases a ten-day trial course of corticotropin was given; and if relapse occurred continuous treatment was begun. The daily dose of corticotropin was 1 mg. per pound until albuminuria had ceased for one to two weeks; if there was no response to the treatment in three weeks, the dose was increased to 1.2 mg. per pound; and at this time the same dose was given every other day. After the first month the dose was cut about 3 per cent of the original dose; during the next month, 1.5 per cent of the original dose, during the following month, 0.5 per cent; and finally 1 mg. per pound was given twice a week.

An increase in albuminuria (2 to 4 plus) was considered to indicate a relapse and either the dosage or the frequency of administration of the corticotropin was doubled immediately until the albuminuria was controlled, usually within three to ten days. Sulfadiazine (0.5 gm. daily) was given until the patient was well for six months; any coryza or pharyngitis was treated with penicillin and the dosage of corticotropin doubled until the infection subsided.

A 200 mg. sodium diet was used until all signs of Cushing's disease, or hyperadrenocorticism disappeared; and 3 to 5 Gm. of potassium chloride or 6 to 12 Gm. of potassium salts in solution (Potassium Triplex) were given during the same period. During more than two years of observation no deaths, and no progressive renal failure have occurred in this group of patients; and all but one of the 25 children have responded favorably, although relapses have occurred. Most of the patients were able to return to full activity within two to six weeks when the albuminuria disappeared and all have developed normally. The only complications were the appearance of signs of Cushing's disease in all but two patients and

"slight" acne in some of the older children. No serious infections occurred during the treatment, as all the children were under close observation, and respiratory tract infections were treated promptly with antibiotics.

COMMENT

It appears certain that nephrosis is benefitted by cortisone-like compounds. Experience has showed that the corticotropin gel is as effective as other forms. The results in this study are remarkably good. J.T.B.

RHINOLARYNGOLOGY

L. CHESTER McHENRY, M.D., F.A.C.S.*

Acute Obstruction of the Upper Respiratory Tract

D. E. McDowell and W. H. Maloney (*A. M. A. Arch. Otolaryngology*, 61:29, Jan. 1955) present a study of 19 cases of acute upper respiratory obstruction in which emergency tracheotomies were done at a general hospital. As most of these cases are first seen in the receiving ward of the hospital, the authors are of the opinion that a tracheotomy tray should be ready in this ward and the physician in charge should be ready to do a tracheotomy in case the emergency is so acute that it is impossible to wait for the "responsible" resident or staff physician; but that one service should be responsible for all tracheotomies and the care of the patients in the hospital. Because delay in diagnosis and treatment of acute obstruction of the upper respiratory tract leads to many complications, which may be fatal, it is better to "err on the side of too early and too many tracheotomies rather than too late and too few." In the 19 cases reported in which emergency tracheotomy was done, the most common cause of the acute obstruction was laryngotracheobronchitis, in 7 cases, 5 of which were in children. In these cases, the patient is given antibiotics following operation: the broad-spectrum antibiotics are employed, as many of the organisms causing laryngotracheobronchitis are resistant to penicillin and the sulfones. The next most common cause of acute obstruction in this series was carcinoma of the larynx, in 4 cases; in these cases, routine laryngoscopy is done as soon as possible after the tracheotomy to determine the best method of treatment—surgery or irradiation. Other less common causes of acute upper respiratory tract obstruc-

McHenry

* Associate Professor of Otolaryngology, Oklahoma University; Diplomate of American Board of Otolaryngology; attending staffs St. Anthony and State University Hospital; President, Oklahoma State Medical Association.

tion in this series were fracture of the mandible (2 cases), coma, carcinoma of the thyroid, rupture of the trachea, mediastinal and cervical emphysema, neck abscess, and retropharyngeal abscess (one case each).

COMMENT

The authors' points are very well made. People who are interested and have responsibilities for such care should read the article in detail as the details of postoperative care are of almost equal importance to the indications for the surgery itself. The authors are dealing only with obstruction of the upper respiratory tract in this instance. There are other indications for tracheotomy in unconscious patients who are not able to clear their upper air passages of accumulating secretions.

L.C.McH.

Local Treatment of Allergic Rhinitis with Cortogen and Chlor-Trimeton Maleate

W. H. Evans (*Eye, Ear, Nose & Throat Monthly*, 34:39, Jan. 1955) reviews the use of cortisone and ACTH in rhinologic conditions; and reports his own use of cortisone for local treatment of such conditions. In 3 cases nasal polyps were treated by direct injection of Cortogen into the polyp; in all 3 cases the injections caused a marked diminution in the size of the polyp which was then easily removed surgically. In most cases reported by the author, Cortogen was used for the local treatment of nasal allergy; at first Cortogen alone was employed, either as a nasal pack or as nasal drops. More recently he has used a combination of Cortogen and Chlor-Trimeton maleate as nasal packs, nasal drops or both. He has treated "about 300 patients" by this method. In the majority of cases treated the allergic rhinitis was of the acute type or an acute flare-up of a chronic condition; in most of these cases the symptoms were relieved by a few office treatments with the packs and the use of the drops at home and treatment was discontinued as soon as relief was obtained. In the cases of chronic allergic conditions treated with Cortogen and Chlor-Trimeton maleate, most of the patients had been under observation for several years and had failed to respond to other methods of treatment; in "virtually every instance," the local treatment with Cortogen and Chlor-Trimeton maleate gave better results than any other treatment employed. Results were "especially gratifying" in cases of hay fever due to grass and ragweed sensitivity. In the seasonal cases, treatment with packs and nose drops at the beginning of the season either prevented or promptly relieved the symptoms. In a few cases in which there was sensitivity to multiple antigens, the use of the nose drops is continued for a longer period, usually intermittently. In the cases treated no damage to nasal tissues has been observed, and even when treatment has been prolonged, no systemic reactions have occurred.

COMMENT

We are still disinclined to use such powerful agents for ailments of this sort where the treatment is symptomatic only and where the symptoms recur as soon as the treatment is stopped. In our own experience local treatment of the acute allergic nose almost invariably makes it worse.

L.C.McH.

The Control of Postoperative Adenoid Bleeding with Adrenosem

C. B. Owings (*Laryngoscope* 64:21, Jan. 1955) states that in the past six

or seven years a definite increase in the incidence of postoperative adenoid bleeding has been observed at the Germantown Hospital (Germantown, Pa.), while postoperative bleeding from the tonsil fossa has not shown a similar increased incidence. Various methods of treatment have been tried, including the administration of ascorbic acid and vitamin K, but had failed to reduce the incidence of the adenoid bleeding, until Adrenosem was tried. Adrenosem is a synthetic chemical, which "appears to be specific" for checking bleeding due to increased capillary permeability, but has no effect on bleeding from large, severed blood vessels. Previous to the use of Adrenosem, adenoid bleeding occurred in approximately 10 per cent of all adenoidectomies at the Hospital. Recently Adrenosem has been given preoperatively to 102 patients; it was given intramuscularly in a dosage of 2½ mg. for children and 5 mg. for adults fifteen minutes before anesthesia. In these 102 cases, there was only one case of typical adenoid bleeding and 3 cases who "showed some bright red blood" from the nose and mouth; the bleeding was promptly controlled by the administration of 5 mg. Adrenosem intramuscularly. These 102 patients do not include allergic patients in whom tonsillectomy and adenoidectomy were not done during the pollen season, but Adrenosem will be used in such cases when operation is indicated.

COMMENT

In our experience if 10 per cent of adenoidectomies had bleeding following operation some radical revision of the technique should be brought about. We wonder whether more care at the time of surgery was not used in the cases who were in the experiment and getting this preparation.

L.C.McH.

The Incidence of Cancer of the Larynx in Relation to the Incidence of Cancer of the Bronchi

James Maxwell (*Lancet*, 1:193, Jan. 22, 1955) presents statistics for England and Wales showing that there has been no increase in the incidence of cancer of the larynx in the past ten years, and the proportion of cases of laryngeal cancer to the cancer total has definitely decreased and is lower than it was before the first World War. That there is an increase in bronchial cancer is "now universally admitted." If inhalation of tobacco smoke or other irritant is an important factor in the causation of bronchial cancer, it would seem, in the author's opinion, that the incidence of cancer of the larynx should not show a definite reduction, as "the main contact" of any irritant inhaled must be in the larynx and "the concentration of any such substance must be much less in the more distal parts of the bronchial tree." Nor can the relative immunity of the larynx to cancer be explained as due to the nature of its mucous membrane, as most carcinogenic agents "act quite strongly" on squamous epithelium, and an increase in cancer of the bronchi due to such agents could be expected to be associated with an increase in cancer of the larynx. Since this is not the case, the author's conclusion is that whether or not tobacco smoke or other irritant inhalant is a factor in producing bronchial carcinoma, "some hidden and hitherto unsuspected factor is responsible" for the undoubted increase in lung cancer.

COMMENT

We question the author's idea that there is a relative immunity of the larynx to cancer or that there has been a decrease in the incidence of laryngeal cancer in the last ten years.

L.C.McH.

Atypical Laryngeal Lesions: Problems in Diagnosis

Gordon McCoy (*California Medicine*, 81:328, Nov. 1954) notes that it is fortunate that hoarseness is often the initial symptom of various diseases of the larynx, occurring in the early stages, so that the patient comes under observation before the disease is advanced. As a rule the diagnosis can be established by the usual methods of laryngeal examination, but in some cases of atypical lesions, especially those entirely or partially below the mucosa with resulting distortion of the larynx, special methods are necessary for correct diagnosis; the majority of such atypical laryngeal lesions are carcinomas and cysts. The special methods of diagnosis that the author has found most useful in cases of this type are tomography (facilities for which are now generally available), aspiration by direct or indirect laryngoscopy, thyrotomy and direct frozen section biopsy when biopsy by the usual methods has been negative, but carcinoma is "strongly suspected clinically." If thyrotomy and frozen section biopsy are done and if the findings are positive for carcinoma, operation must be done immediately i.e., "at the same sitting"; even a week's delay may be "disastrous." Three illustrative cases are reported, 2 of which were cases of submucosal cancer of the larynx in which the diagnosis could be established only by thyrotomy and frozen section biopsy.

COMMENT

We agree that investigation of any neoplasm or tumor of any sort of the larynx must be carried on to a positive diagnosis as established. Since over 90 per cent of carcinomas of the larynx are epidermoid carcinoma which comes from the epithelium, these cases of submucosal cancer are very rare indeed.

L.C.McH.

Nasal Leishmaniasis Americana in Panama

Ludwig Joffe (*A. M. A. Archives of Otolaryngology*, 60:601, Nov. 1954) states that American leishmaniasis occurs from Mexico to Argentina and that lesions of the nose due to this infection are more prevalent in the southern countries of this area than further north. Only one case of leishmaniasis involving the nasal mucosa has been previously reported in Panama; the author reports 8 other cases (one of which had been previously reported "in part") observed in the Almirante district among employees of the Chiriqui Land Company (a subsidiary of the United Fruit Company). The nasal lesions in most of these cases resembled those of rhinitis sicca with considerable crusting; in one case there was a tumor in the right nostril which was easily removed. Examination of the tissue in this case and in some of the other cases did not definitely establish the diagnosis of leishmaniasis. The intradermal Montenegro test, however, was found to be most helpful in making a definite diagnosis of leishmaniasis, as soon as antigen for this test became available. Treatment with an antimony preparation, stibophen (Fuadin) resulted in the healing of the nasal lesions. These cases are reported because little is known in the United States of tropical diseases of the ear,

nose and throat; yet such conditions may develop in the temperate zone in persons who have lived in endemic regions; and "modern travel and war" may bring such persons to the United States more frequently.

COMMENT

A kindly reminder to those who encounter such unusual lesions with bizarre behavior to become aware of such conditions.

L.C.McH.

OTOLOGY

L. CHESTER McHENRY, M.D., F.A.C.S.*

Experimental Study of the Efficiency of Two Group Hearing Tests

K. O. Johnson and H. A. Newby (*A. M. A. Archives of Otolaryngology* 60: 702, Dec. 1954) report a comparative study of two group hearing tests—the Western Electric 4CA group phonograph speech audiometer and the Massachusetts group pure tone test. Each child was also given an individual "sweep frequency" test with a pure tone audiometer. Any child who failed to hear any frequency at 15 db. was given a threshold test. The efficiency of the group tests was determined by comparison with the findings in the individual tests. A total of 1496 school children in the lower and upper grades of elementary schools in a large city in California were tested by these methods. The Massachusetts test was found to be definitely superior to the Western Electric test in detecting children with impaired hearing in both the lower and the upper grades. The Western Electric test failed to discover 4 out of 5 children with impaired hearing as shown by the individual tests; while the Massachusetts test failed to discover only one of 5 children with impaired hearing in the upper grades and 3 of 10 children with impaired hearing in the lower grades. The authors are of the opinion that the Massachusetts test "performed at acceptable levels of efficiency, at least in the upper grades," and that its efficiency may possibly be further increased by lowering the intensity of the screening levels, as now used. The use of a group test in determining hearing loss in school children has the advantage over individual hearing tests that large numbers of children can be "screened" in a relatively short time. Special facilities for children that are hard of hearing are now available and it is important that children who require these facilities should be discovered by adequate hearing tests for school children.

* Associate Professor of Otolaryngology, Oklahoma University; Diplomate of American Board of Otolaryngology; attending staffs St. Anthony and State University Hospitals; President, Oklahoma State Medical Association.

COMMENT

Only continued checking, rechecking and crosschecking of results will determine the efficacy of such procedures. This study certainly leads to some interesting conclusions.

L.C.McH.

An Evaluation of Certain Therapeutic Agents and Procedures in the Treatment of Acute Diffuse External Otitis

B. H. Senturia and associates (*Laryngoscope* 64:1001, Dec. 1954) report a study of the results of treatment of acute diffuse external otitis with five antimicrobial agents—oxytetracycline HCl, containing 5 mg. oxytetracycline hydrochloride per cc. (Terramycin Otic); polymyxin B sulfate, 0.1 per cent solution in an isotonic saline vehicle; 4-aminomethylbenzenesulfonamide HCl, 5 per cent aqueous solution (Sulfamylon Hydrochloride Viscous Solution, 5 per cent); netrofurazone anhydrous ear solution, containing 0.2 per cent nitrofurazone (Furacin Anhydrone Ear Solution, N. N. R.); and oxytetracycline-polymyxin otic, containing 5 mg. oxytetracycline and 10,000 units of polymyxin B per cc. A group of controls was treated with normal (0.85) per cent saline and fatty acids in a lanolin vehicle. A total of 493 infected ears was treated, the lesions being unilateral in 269 cases and bilateral in 112; some of the patients did not return for follow-up; and 17 required systemic as well as local treatment, and are not included in this study of results; 386 infected ears were studied for comparison of therapeutic results. It was found that none of the 5 antimicrobial agents studied gave uniform and "highly satisfactory" results. Response to treatment with any of these agents was often slow. Oxytetracycline and oxytetracycline combined with polymyxin gave "slightly better" results in the relief of pain, tenderness and edema than the other agents employed. Little difference in the effectiveness of the various agents employed was demonstrated by comparing the number of patients cured after five days' treatment and the number requiring a change in the treatment. Bacteriological study showed the high incidence of Pseudomonas in these cases of acute diffuse external otitis, confirming the observations of others. In most cases the number of Pseudomonas organisms was markedly reduced, but a few of these organisms persisted in the external ear canal, even in 25 per cent of the patients who were clinically cured.

COMMENT

External otitis remains a perplexing problem. This is only a partial report by a very active worker in the field.

L.C.McH.

Deafness, Head Injury and the Medico-Legal Ear

M. R. Guttman (*Eye, Ear Nose and Throat Monthly*, 33:734, Dec. 1954) states that it is generally admitted that deafness is traumatic in origin if it follows a head injury with fracture at the base of the skull and there is a history of bleeding from the ear, rupture of the membrane, and hemotympanum after injury, and the x-ray examination shows evidence of fracture of the temporal bone. But it has been found that deafness of the nerve or inner ear type may also be caused by trauma without evidence of basal skull fracture. It is often difficult to prove or to disprove that deafness of this type is due to head injury, especially in older persons, who

usually show impairment of hearing owing to advancing age; if, however, deafness following an injury is of greater degree than that to be expected for the patient's age, it may be found to be due to the injury. Deafness due to "acoustic trauma," i. e., exposure to excessive noise in industry or in military service may also be confused with deafness caused by a head injury. Repeated audiograms, taken at intervals of a few days, are of special value in detecting simulated deafness and in distinguishing it from true traumatic deafness or from psychogenic deafness, which may follow head trauma in persons who are neurotic or emotionally unstable, and is a "true disability," as distinguished from simulated deafness. Such "interval" audiograms represent "an objective finding" that can be presented before industrial commissions or in court.

COMMENT

A patient who simulates a deafness following a head injury where the examiner has no detailed knowledge of his hearing previous to the injury presents a very difficult problem because it has been quite well established that hearing loss may be caused by an injury that leaves no objective evidence of the injury other than the hearing loss.

L.C.McH.

Intra-Arterial Administration of Penicillin in Treatment of Acute Mastoiditis

S. Nakamura and K. Naganuma (*A. M. A. Archives of Otolaryngology*, 61:61, Jan. 1955) report the treatment of 24 cases of acute mastoiditis by the injection of penicillin into the common carotid artery; the optimum single dose of penicillin administered by this route was found to be 600 units per kg. body weight; the injections were given every three to six hours depending upon the penicillin sensitivity of the organisms causing the mastoiditis, as determined by bacteriological study of the ear discharge. The total amount of penicillin given in the cases that responded satisfactorily to the treatment varied from 120,000 to 400,000 units. Of the 24 cases of acute mastoiditis treated by this method, cure was obtained in 21 cases and in these cases mastoidectomy was not done; in one case there was temporary improvement followed by recurrence; in 2 cases there was no response to the treatment and mastoidectomy was done. In a study of the distribution of penicillin after intra-arterial injection in some of the patients treated and in experimental animals (rabbits) it was found that the concentration of penicillin in the ear discharge was greater than that in the blood of the internal jugular vein on the diseased side; and that in the experimental animals the concentration was greater in the pathological tissues from diseased ears than in the blood. Similar increased concentration of penicillin in the ear discharge was not observed in patients given intramuscular injections of penicillin. The intra-arterial injection of penicillin was found to be much more effective than the intramuscular injection in the treatment of acute mastoiditis, especially with Pneumococcus Type III infections.

COMMENT

This article needs to be read in the original publication by those who are interested because rather detailed studies were made. In this country where the amount of penicillin available is unlimited, and where it is not expensive any more, otologists have been able to obtain comparable results by intramuscular injection in larger dosages than

those employed. We would be extremely reluctant to make intra-arterial injections every 3 to 6 hours for a number of days except in extremely desperate circumstances where we had no hope of controlling the situation otherwise.

L.C.McH.

Mobilization of the Stapes to Restore Hearing of Otosclerosis

Samuel Rosen *(New York State Journal of Medicine*, 55:69, Jan. 1, 1955) describes an operation for mobilization of the stapes. The indications for this operation are the same as for fenestration in the treatment of otosclerosis, but there is no vertigo postoperatively and hospitalization is necessary for only one day. Antibiotics are given for five days after operation until the dressing is removed. If mobilization of the stapes fails to result in definite improvement in hearing, fenestration can be done, the author states, "without penalty." Five cases of otosclerosis are reported in which mobilization of the stapes resulted in definite improvement in hearing; in 2 of these cases, the hearing became normal. These patients have been followed up for sixteen to twenty-five months and have all maintained the improvement in hearing that followed the operation. This indicates that the footplate of the stapes has not reankylosed in any case. Mobilizing the footplate of the stapes, the author believes, results in "restitution of the normal physiologic function of the ossicular chain." In the cases reported, as noted above, there has been no evidence of reankylosis of the stapes, but if this should occur, the stapes could be "remobilized."

COMMENT

We do not question the results reported by Dr. Rosen but so far we have seen no confirmatory reporting by other workers in this field. The author reports that an ankylosed stapes can be mobilized by mechanical force, i.e., the breaking loose of the ankylosing adhesions, and that then the footplate of the stapes will remain mobile. This seems to us to be contrary to the basic principles of injury and healing.

L.C.McH.

Hearing and Industrial Noise

S. C. Bostic *(United States Armed Forces Medical Journal* 6:75, Jan. 1955) describes the methods used to protect hearing in the personnel of a Naval Air Station, where many of the noises cannot be controlled at their source. Therefore protective equipment was given to personnel exposed to such excessive noises. The ear canals were examined at the first visit to the dispensary, and ear defenders were given to all persons exposed to excessive noise; all but the sandblasters who wear abrasive masks were fitted with protective helmets. The hearing level for each employee was evaluated by a pure-tone audiometer in a suitable testing chamber; such examinations were repeated periodically. At the beginning of this study pre-exposure audiograms had not been taken and some of the employees had been exposed to noise at their work for many years. Subsequently pre-exposure audiograms were made on all employees before assignment to a "danger" area. Audiograms were made during the first hour of the working day before the patient had been exposed to noise on that day. The number of persons who showed hearing loss at various frequencies varied with the occupation and the proximity to the source of noise. In a small group of sandblasters, for example, the tests showed a binaural loss of more

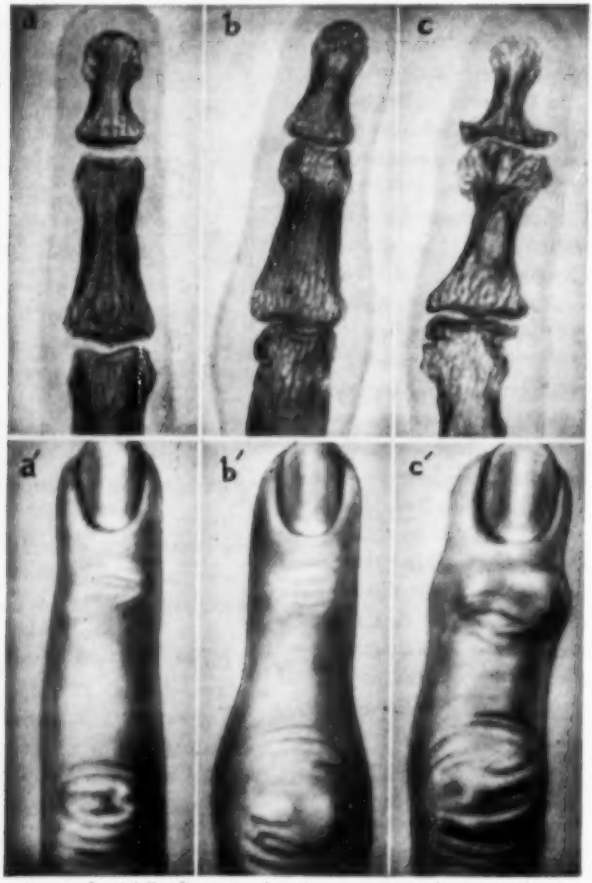
than 10 per cent in 41 per cent of the group.

COMMENT

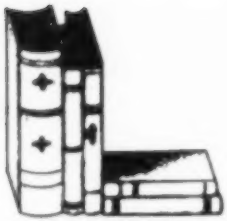
The evaluation of the methods used to protect workers is possible only from consideration of the comparable results over a long period of time. Testing before exposure to traumatic noise, at intervals during exposure, and after considerable periods of time, is essential.

L.C.McH.

Clini-Clipping



Comparative views of middle fingers, showing: a, normal x-ray; a', normal exterior; b, x-ray of rheumatoid arthritis illustrating narrowing of joint space; b', exterior of fusiform swelling at proximal interphalangeal joint; c, x-ray of hypertrophic arthritis illustrating Heberden's nodes at terminal phalangeal joints, also loss of cartilage in terminal phalangeal joints; c', exterior of Heberden's nodes.



Medical Book News

Edited by Robert W. Hillman, M.D.

Medicine

Rheumatic Diseases. Diagnosis and Treatment. By Eugene F. Traut, M.D. St. Louis, C. V. Mosby Co., [c. 1952]. 4to. 942 pages, illustrated. Cloth, $20.00.

This book is an excellent compilation of all the current information regarding rheumatic diseases, up to the date of its publication. It is written so as to be of value to the medical student, the general practitioner and to the rheumatologist, as well.

The scope of the book encompasses all aspects of skeletal pain including the theories of etiology, anatomy and physiology, etc., plus other aspects such as the psychologic ones. The classification of the various types of rheumatic disease is arranged so as to minimize the confusion which has previously existed because of vague terminology. Treatment is discussed in detail with an intelligent approach to a field that has many unanswered problems.

Being clearly and plainly written the book is readily comprehended and yet the presentation is not too didactic or rigid. All in all the text must be considered as a valuable addition to any physician's library.

PETER J. DULLIGAN

Clinical Mycology

Manual of Clinical Mycology. By Norman F. Conant, Ph.D., David Tillerson Smith, M.D., Roger Denio Baker, M.D., Jasper Lamar Callaway, M.D. & Donald Stover Martin, M.D. 2nd Edition. Philadelphia, W. B. Saunders Co., [c. 1954]. 12mo. 456 pages, illustrated. Cloth, $6.50.

This book is really five books in one, as each author describes a section of each chapter pertaining to his particular field. The book reviews the many fungi which have been studied at Duke University during the past ten years. It covers not only those fungi that affect the integumentum of the body, but also those that cause systemic involvement. Each chapter discusses in detail the etiology, pathology, mycology, prognosis, and treatment concerning the group under discussion. The book is profusely illustrated, containing eight-eight more photographs than the first edition, bringing the total up to two hundred and two. The pictures are so good that no textual explanations are necessary.

At the end of each chapter there is an extensive bibliography pertaining to the most recent articles on fungus dis-

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MEDICAL BOOK NEWS

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eases thus bringing the reference material up to date.

The appendix contains a chapter on the methods used in identifying the different organisms under investigation, and also the latest and most improved agents needed to carry out such work.

In the appendix there are several pages of prescriptions covering dermatologic therapy.

This is not only a book which may be used to advantage by the general practitioner, but is also a worthy addition to the library of the specialist.

GEORGE F. PRICE

BOOKS RECEIVED FOR REVIEW

Isotopic Tracers in Biochemistry and Physiology. By Jacob Sacks, M.D. New York, McGraw-Hill Book Co., [c. 1953]. 8vo. 383 pages, illustrated. Cloth, $8.50.

Healthier Living. A Text in Personal and Community Health. New York, John Wiley & Sons, [c. 1954]. 8vo. 928 pages, illustrated. Cloth, $0.00.

The Joints of the Extremities. A Radiographic Study. Notes on Non-Routine Methods, Non-Routine Ideas, and Less-Common Pathology. By Raymond W. Lewis, M.D. Springfield, Ill., Charles C Thomas, [c. 1955]. 4to. 108 pages, illustrated. Cloth, $8.50.

Fourth Annual Report on Stress. By Hans Selye, M.D. & Gunnar Heuser, M.D. Fifteen contributors. With the editorial assistance of Maria Schwappach. Montreal, Canada, Acta, Inc., [1954]. 8vo. 749 pages, illustrated. Cloth, $10.00.

Investing For The Successful Physician

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An Appraisal of the Electronics Industry

Recently one layman was attempting to explain to a group of other laymen in simple language just what engineers mean when they talk about the "electronics" industry. He drew on a statement by the American Standards Association defining electronics as "the branch of science and technology which relates to the conduction of electricity through gases or in vacuums . . . the science that employs radio receiving tubes, special electronic tubes, television picture tubes, and the so-called solid state crystal devices. In other words . . . such things as television, radio, and radar, but not home lighting or electric refrigerators or cake mixers."

The Government provides the largest market for electronics equipment which includes guided missiles, radar of various types, communications equipment, and control equipment for guns, tanks, ships, and airplanes.

At the present time, entertainment devices contribute a substantial proportion of total electronic equipment, and this market includes television receivers, television broadcasting equipment, radios, home recorders, and a small amount of home communications equipment.

Stanford Research Institute recently provided Hoffman Laboratories with the following list of products currently being sold for commercial and industrial use in order of importance: data processing equipment, laboratory and service equipment, industrial control instruments, x-ray equipment and tubes, broadcast equipment, mobile and amateur radio, heating apparatus, radiation instruments, industrial television, microwave relay, and non-military marine and aviation equipment. While many other electronic products in the three above-mentioned fields could be listed here, it is believed that most of the more important items are covered.

Growth Prospects for the electronics industry appear to be outstanding. Frank M. Folsom, president of

RCA, said recently that total annual sales of the electronics industry grew from $1.6 billion in 1946 to $8.4 billion in 1953, $8.8 billion in 1954, and further growth of close to $12 billion by 1957 is anticipated. A Sylvania Electric spokesman said recently: "Today, electronics is a $9 billion industry; by 1960 it will be a $15 billion industry; and by 1964 it will be a $20 billion industry. That means that within a decade it will have more than doubled its present size. It is extremely difficult to envision any other major industry that will grow that fast between now and 1965." These two statements are typical of the many predictions that the electronics industry appears capable of outstanding growth.

There are several areas of growth in electronics of which television is one, particularly when color television becomes more popular. However, it is recognized that the TV industry is in a more advanced stage of growth than the more infant guided missiles, data computers, and industrial electronics fields. Consequently the more attractive TV companies appear to be RCA and Motorola, both of which have some diversification into other growing fields. These are the top producers of TV receivers which are well entrenched in public acceptance.

The TV and radio components end of the business is also keenly competitive, although there are opportunities for participation in the over-all growth of the entire electronics and electrical industries in such companies as Sprague Electric and Cornell-Dubilier Electric. The smaller companies will find it a lot more difficult to compete successfully due to the broader product line and superior research facilities of the larger

competitors. In transitors, Texas Instruments appears to be one of the more attractive smaller companies. A number of other companies are also producing transitors in limited quantities, including Raytheon, Philco, Minneapolis-Honeywell, General Electric, and RCA.

Avionics, electricity and electronics in aviation, is one of the fastest growing segments of the aircraft industry. It has been estimated that almost half the cost of a modern jet bomber can be accounted for by its avionics equipment. In pre-war days, the cost and use of such equipment was relatively small.

Avionics provides radar, radio, instrumentation, navigational systems, guidance systems, etc., for individual aircraft, missiles, and ground bases installations. In addition to expanding and perfecting its current functions, the major trends in avionics include the development of new products and the integration of numerous devices into complex super systems. The proposed systems will employ many radars or other sources of intelligence (both ground based or airborne), vast communications networks to feed such intelligence into ground based or airborne control centers, batteries of digital computors to analyze raw data and a data link to transmit automatically information to aircraft and control their flight path or point of bomb release.

In view of the rapid growth of the avionics industry in recent years, many companies have entered the field. However, the size and complexity of most programs usually limit their development to larger companies. This is due to the large facilities, expensive equipment, and highly trained personnel needed. Nevertheless, smaller compa-

nies do participate through the manufacture of various parts and components.

A number of the aircraft companies have electronics divisions. Douglas, General Dynamics, Martin, North American Aviation, and Northrop, to cite some examples, are very active in the field and conduct extensive programs. However, inasmuch as the major source of revenue of aircraft companies will continue to be derived from aircraft production, participation in the growth of the avionics industry will probably be better achieved with companies more directly in the field. Two such companies are Bendix Aviation, and Sperry (soon to merge with Remington Rand). Both are major units in the industry and possible long-term growth candidates.

Thompson Products is another growing participant. The company has acquired a number of electronics companies in recent years. In addition, it has a large interest in Ramo-Woolridge which is considered a very promising electronics outfit. Lear, a smaller company, is also active in the field and has shown sales growth in late years.

The ever increasing complexities and volume of routine paper work continue to necessitate improved office equipment. The application of electronics to the labor saving equipment of business administration is probably the most important advance in this direction in many years. IBM has been one of the greatest exploiters of electronics as an improvement to its electro-mechanical punch card accounting systems. The outgrowth has been the electronic calculating machines which have recently received much attention. Many companies have made major efforts to estab-

	Recent Price	Dividends Paid Last 12 Months	Yield
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Bendix Aviation	56⅞	2.00*	3.5*
Sperry	64	2.00†	3.1†
Thompson Products	57	1.40*	2.5*
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Motorola	48	1.50	3.1
Radio Corporation of America	43	1.35‡	3.1‡
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the hatter depends on the doctor for health

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Pyridoxine HCl (B_6)	1.0	mg.	Iron — from 4 gr. ferrous sulfate exsic.	76.2	mg.
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*Waife, S.O. M. Clin. North America 27:1709 (Nov.) 1943.

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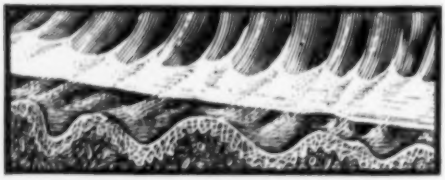

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Hidden trichomonads. Trichomonads do not exist in the vaginal secretion alone. They are vigorously motile and burrow deeply into the surface of the vaginal mucosa where cellular debris and mucus cover them. VAGISEC liquid lowers surface tension, penetrates the cellular debris and dissolves mucoid material[1,2] that lines the vaginal wall and lies buried among the rugae. It reaches and explodes hidden as well as surface trichomonads.

Unique synergistic action. VAGISEC liquid combines a chelating agent to complex and remove the trichomonad's calcium, a wetting agent to remove its lipid material, and a detergent to denature its proteins. The trichomonad swells up and explodes. *No other agent or combination of agents kills the trichomonad in this specific fashion, or with this speed.*

Trichomonads explode within 15 seconds. "Motion pictures taken through a phase-contrast microscope at 24 frames per second show that individual trichomonads are destroyed within 10 to 14 seconds after contact with a 1:250 dilution."[2]

The Davis technic. The remarkable speed and unique synergistic action of this new trichomonacide are the result of the intensive research of its originators, Dr. Carl Henry Davis, well known gynecologist and author and C. G. Grand, research physiologist, who introduced the agent as "Carlendacide" and had it clinically tested by over 100 leaders in obstetrics and gynecology. "Those who have followed the plan of treatment as closely as possible, have had better than 80 per cent of cures among non-pregnant patients with one course of treatment."[2] For "the small percentage of women who have an involvement of cervical, vestibular or urethral glands, other treatments will be required."[3]

Office treatment. Expose vagina with speculum. Wipe walls dry with cotton sponges and wash thoroughly for about three minutes with a 1:250 dilution of VAGISEC liquid. Remove excess fluid with cotton sponges. Office treatments are an integral part of the Davis technic.

Home treatment. Prescribe both VAGISEC jelly and VAGISEC liquid for home treatment. Patient inserts VAGISEC jelly each night and douches with VAGISEC liquid (1 teaspoonful to a quart of warm water) each morning, except on office treatment days. (Standard douche bag holds 2 quarts.)

Summary. VAGISEC liquid penetrates to hidden trichomonads and explodes them in 15 seconds. VAGISEC jelly and liquid are non-toxic and non-irritating, leave no messy discharge or staining. The Davis technic is a triple combination of 1) VAGISEC liquid in office treatment; 2) home treatment with VAGISEC jelly at night and 3) douche with VAGISEC liquid in the morning. VAGISEC jelly and liquid have been clinically tested and proved a remarkably fast-acting, effective treatment for vaginal trichomoniasis. Because of greater penetration, this therapy results in fewer flare-ups.

1. Davis, C.H.: Am. J. Obst. & Gynec. 68:559 (Aug.) 1954.
2. Davis, C.H.: West. Jour. Surg. 63:55 (Feb.) 1955.
3. Davis, C.H.: J.A.M.A. 157:126 (Jan. 8) 1955.

JULIUS SCHMID, INC., *gynecological division*
423 West 55th Street, New York 19, N. Y.

Active ingredients: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra acetate, Sodium dioctyl sulfosuccinate. In addition, VAGISEC jelly contains Boric acid, alcohol 5% by weight.

Terra-Cortril

brand of oxytetracycline and hydrocortisone

topical ointment

when the
dermatologic
picture is due to
double exposure

Terra-Cortril Topical Ointment rapidly clears both underlying inflammation and superimposed infection, through the combined actions of CORTRIL®—most potent anti-inflammatory adrenocortical steroid;[1] and TERRAMYCIN®—"perhaps the most effective antibiotic in pyogenic skin diseases."[2]

supplied: In 1/2-oz. tubes containing 3% TERRAMYCIN (oxytetracycline hydrochloride) and 1% CORTRIL (hydrocortisone, free alcohol) in a specially formulated, easily applied ointment base. also available: CORTRIL Topical Ointment and CORTRIL Tablets.

1. Rukes, J. M., et al.: Metabolism 3:481, 1954.
2. Peterkin, G. A. G.: Brit. M. J. 1:522, 1954.

PFIZER LABORATORIES *Pfizer* Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

INVESTING FOR THE SUCCESSFUL PHYSCIAN

—Concluded from page 80a

lish a position in this field. With IBM in perhaps the most advanced position, followed by Remington Rand and its "Univac," the industry has seen introductions by Underwood, Burroughs, National Cash Register, Marchant, and ElectroData. Because of the large amount of capital necessary to provide essential research, the larger companies are in the most favorable position to market, develop, improve and produce electronic calculators.

The accompanying listing appears to be the most attractive situations in the Electronics Industry.

Diagnosis, Please!

ANSWER

(from page 25a)

SIMPLE ABSCESS

Note fluid level in left parahilar infiltration seen 10 days after tonsillectomy.

the Resions

...specifics in diarrhea

The RESIONS offer two effective compounds for treatment of almost any diarrheal condition found in clinical practice.

The RESIONS act by ion exchange . . . to attract, bind and remove toxic materials in diarrheas caused by food or bacterial toxins, by prolonged use of certain drugs, and in general infectious diseases.

The RESIONS *are safe* because they are totally insoluble and non-toxic.

RESION therapy will control about 90% of common diarrheas.

RESION P-M-S is intended specifically for rapid control of those rare diarrheas caused by Gram-negative organisms; to prevent secondary bacterial infection; in mycotic diarrhea following the use of the broad-spectrum antibiotics, and to inhibit the enteric growth of *C. albicans* (Monilia).

Resion

time-tested, adsorbent effectiveness

Polyamine methylene resin	10%
Sodium aluminum silicate	10%
Magnesium aluminum silicate	1.25%

CONGO MAGIC

RESION therapy now works scientific magic against diarrhea

and

Resion P-M-S

A new formula providing antibacterials to combat bacillary and fungal vectors

Each 15 cc. contains the RESION formula plus:

Polymyxin B sulfate	125,000 units
Phthalylsulfacetamide	1.0 Gm.
Para hydroxybenzoic acid esters	0.225 Gm.

THE NATIONAL DRUG COMPANY
Philadelphia 44, Pa.

Dosage: RESION—1 tablespoonful hourly for 4 doses; then every 3 hours while awake. RESION P-M-S—1 tablespoonful hourly for 3 doses; then 3 times daily.

Supplied: RESION, in bottles of 4 and 12 fluid ounces. RESION P-M-S, bottles of 4 fl. oz.

NUTRITIONAL AND THERAPEUTIC ADJUVANTS IN HEALTH AND DISEASE

Bioflavonoids of Orange and Lemon

Hesperidin Complex
Lemon Bioflavonoid Complex
Hesperidin Methyl Chalcone
Calcium Flavonate Glycoside

Action of the bioflavonoids on the capillary

Maintenance of normal capillary integrity
For the treatment of abnormal capillaries such as:
Increased fragility
Increased permeability
Decreased resistance

Bioflavonoid activities in cellular metabolic processes

Hyaluronidase inhibition
Antihistamine effect
Closely related to the activity of the adrenal cortex
Inhibition of epinephrine oxidation
Sparing action on vitamin C
Synergism with vitamin C

Indications

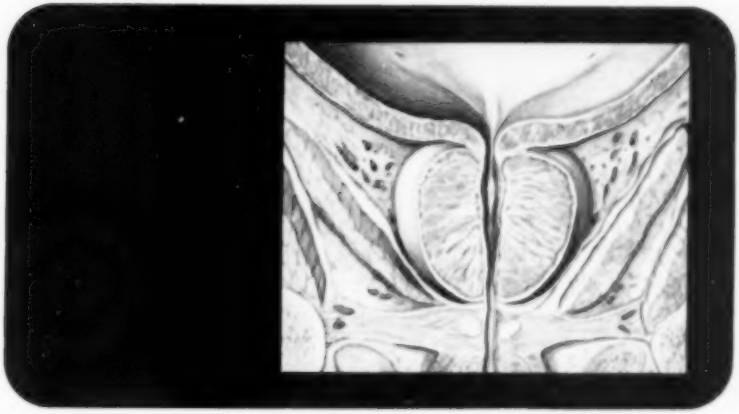
As adjuvants in many disease states having capillary impairment including:
Habitual abortion
Respiratory diseases
Inflammatory diseases
Vascular diseases
Geriatrics

Exchange Brand Bioflavonoids are available to the medical profession in pharmaceutical specialties through leading pharmaceutical manufacturers.

Sunkist Growers
PRODUCTS DEPARTMENT

Exchange

PHARMACEUTICAL SALES • ONTARIO, CALIFORNIA



acute and chronic

prostatitis...

76.6% cured or improved with

Furadantin®

brand of nitrofurantoin, Eaton

137 cases of prostatitis were treated with Furadantin with the following results:

	Acute prostatitis	Chronic prostatitis	Total
No. cases	20	117	137
Cured	15	30	45
Improved	4	56	60
Failed	1	31	32

(Personal communications to the Medical Department, Eaton Laboratories.)

Furadantin has a wide antibacterial range

Furadantin is effective against the majority of gram-positive and gram-negative urinary tract invaders, including bacteria notorious for their resistance. Furadantin is not related to the sulfonamides, penicillin or the 'mycins.

With Furadantin there is no blood dyscrasia... no proctitis... no pruritus ani... no crystalluria... no moniliasis... no staphylococcic enteritis.

Furadantin tablets—50 and 100 mg., bottles of 25 and 100. Furadantin Oral Suspension (5 mg. per cc.)—bottle of 4 fl.oz. (118 cc.).

EATON LABORATORIES
NORWICH • NEW YORK

THE **NITROFURANS**—A UNIQUE CLASS OF ANTIMICROBIALS ... PRODUCTS OF EATON RESEARCH

MODERN THERAPEUTICS

Trypsin for Treating Chronic Ulcerative Colitis

Having observed clinical improvement in a patient suffering from chronic ulcerative colitis following the use of trypsin intravenously administered, Milanés and his associates *Gastroenterology*, [*28*:110 (1955)] gave the drug to a group of patients who had already been carefully studied. Trypsin in the form of Enzar was used: an intravenous dose of 125,000 units in Ringer's solution was given twice a day for ten consecutive days. Later, the dose was reduced to 50,000 units once a day. Each patient received two courses of the drug. Side effects included chills, fever, headaches, pruritus, urticaria, vomiting and diarrhea, sometimes severe enough to require discontinuance of the treatment. There was attenuation of the side effects when antihistaminics were used, also, Ringer's solution caused a lower incidence of these reactions than saline. Clinical and sigmoidoscopic improvement was observed in a majority of patients in the group, however results were beneficial rather than curative. The investigators do not point out any definite conclusion, but believe that further studies along these lines are warranted even though awareness of intolerance to the drug must be kept in mind.

Parkinsonism Treated by Parsidol

Parsidol (Lysivane) has been found

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to be beneficial in alleviating manifestations of parkinsonism by a diminution of muscular rigidity and improvement in gait, posture and expression. Ziegler and Torres *Neurology*, [5:197 (1955)] undertook a study of the effects of this drug on a group of clinic patients. Control observations were made with placebos. Several patients who reported marked effects while taking placebos were considered unsuitable for the study. Of the others in the group, a majority demonstrated both subjective and objective improvement, while less than half reported side effects. The daily dosage of Parsidol ranged from 200 to 400 mg. and was given in four equal parts—after meals and at night. The dosage was started at 20 to 50 mg. per day. Two patients in the series showed improvement on the Parsidol alone; in the others, their previous medication was continued throughout the test period. The authors are of the opinion that this drug is most effective in combination with other agents.

Evaluation of Coronary Vasodilator Drugs

In an attempt to evaluate vasodilator drugs in the treatment of coronary disease, Russek and his associates *American Journal of the Medical Sciences* [229:46 (1955)] studied the effects produced by 16 drugs on a group of 60 carefully selected patients. Comparisons were based on the ability of the

specific agent to modify the electrocardiographic response to standard exercise tests. Of the 16 drugs tested, only three are believed by the authors to be worthy of continued clinical use as vasodilators in the management of angina pectoris. *Glyceryl trinitrate*, when administered sublingually in quantities of 1/150 to 1/100 grain five minutes prior to commencement of the test, showed a strikingly favorable effect on the response to exercise as recorded electrocardiographically. It remains the drug of choice for treatment of acute attacks. *Papaverine* in the dosage of one to two grains intravenously or three to eight grains orally is effective in decreasing or abolishing the abnormal electrocardiographic response to standard exercise. *Pentaerythritol (Peritrate) tetranitrate* behaves in a manner which would be expected of an ideal slow-acting preparation of glyceryl trinitrate. For prolonged protection, it appears to surpass all other drugs tested.

Furadantin in Pyuria

Furadantin was effective in reducing the pyuria which occurred after a plastic operation for stricture of the ureter, according to Milton E. Gordon, M.D., in *Journal of Urology* [72:1159 (1954)]. The technic of pyelo-ureteroplasty for such a long narrowing of the upper ureter is superior to the employment of prolonged ureteral intubation which is prone to cause stone formation and infection. Despite the short period of intubation and administration of various antibacterial agents in this

—Continued on following page

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case, the author reports, "the urine from the nephrostomy tube became markedly cloudy and loaded with pus." A urine culture grew paracolon bacillus, resistant to all antibiotics tested. Following administration of Furadantin, the pyuria was reduced from microscopic fields loaded with pus cells to 8-12 per field.

Cortisone Therapy for Rheumatic Fever

Cortisone has been widely used in cases of rheumatic fever with carditis. However, the "rebound phenomena" which so frequently follow decrease or withdrawal of the drug create a problem in connection with its administration. A. L. Bohning has reported a case of rheumatic fever with carditis in the Journal of the *American Medical Women's Assn.* [*10*:73 (1955)] which showed typical reactions. The patient received cortisone, 50 mg. every eight hours, for three months; clinical and laboratory findings became stabilized. When the amount of cortisone was decreased to 50 mg. daily, he became alarmingly ill, but improved upon resumption of the former dosage of the hormone. After six weeks, the dosage was again reduced and followed by similar rebound effects. After a second six-week course of increased administration of the drug (200 mg. daily), symptoms again returned to normalcy, and remained so after cortisone was discontinued. Until these rebound effects are more thoroughly understood, no

—Continued on page 96a

"Because the etiology itself is a combination," Smith and his associates reason that "a combination of therapeutic agents actually becomes the most specific means of combating the condition." Polytherapy, in short, is not merely indicated—it is virtually essential in the vast majority of hypertensive patients.

Using 'Mio-Pressin'—a balanced combination of rauwolfia, protoveratrine, and Dibenzyline†—for the treatment of mild, moderate and severe hypertension, Smith et al. recorded significant clinical improvement in 77% of their patients.

MIO-PRESSIN* *the first specific* 3*-way attack on hypertension*

Smith, Kline & French Laboratories, Philadelphia

1. Smith, C.W., Oueckel, K.L., Brown, A.L., and Thomas, C.G.: to be published.

* Trademark—T.M. Reg. U.S. Pat. Off. for phenoxyl enzamine hydrochloride, S.K.F.

—Continued from page 92a

general regimen for the use of this therapy is possible.

Triple Sulfas Help Cure Bact. Coli Meningitis

A triple sulfa preparation helped save two women who developed *Bact. coli* meningitis following induced abortion, according to a report in the *British Medical Journal* [*1*: 333 (1955)] by Drs. E. W. Hughes and G. C. Manning.

Both women were admitted to the hospital as emergency cases suffering from fever, mental confusion, and neck rigidity suggestive of meningitis. Lumbar punctures disclosed *Bact. coli*, turbidity, and increased pressure in the spinal fluid. One of the patients was started immediately on oral triple sulfas, the other on injections of various antibiotics. Both responded to treatment. Triple sulfas were used for the second patient to clear up a vaginal discharge.

Before the advent of chemotherapy, the reporters point out, meningitis due to *Bact. coli* was nearly always fatal. They conclude that *Bact. coli* meningitis remains a serious infection, although the availability of antibacterial drugs has greatly altered the prognosis and improved the chance of cure.

Diamox Cuts Weight In Cor Pulmonale

Diamox brought relief following dramatic loss of weight for about half of a group of 17 patients severely ill with cor pulmonale, the lung-heart disease. Drs. William B. Schwartz, Arnold S. Relman, and Alexander Leaf of Boston report in the January *Annals of In-*

—Continued on page 96a

Upjohn

Bacterial diarrheas . . .

Kaopectate

Trademark, Reg. U.S. Pat. Off.

with

Neomycin

Each fluidounce contains:

Neomycin sulfate . 300 mg. (4½ grs.)
[equivalent to 210 mg. (3½ grs.) neomycin base]
Kaolin . . . . . 5.332 Gm. (90 grs.)
Pectin . . . . . 0.130 Gm. (2 grs.)
Suspended with methylcellulose 1.25%

Supplied:

6-fluidounce and pint bottles

The Upjohn Company, Kalamazoo, Michigan

—Continued from page 96a

ternal Medicine, [42:79 (1955)]. Diamox is an enzyme which pulls excess fluid out of the body by affecting the acid-base balance so that salts are excreted.

Average weight loss in the responsive group was 15.5 pounds in five to 12 days of treatment with Diamox, the investigators write. Diamox was given at intervals through the day and only after weight had been stabilized for four days. All but two of the group had reached a point where they no longer responded to the older mercurial diuretics. The entire group suffered from respiratory acidosis, or an excess of carbon dioxide in the lungs and blood due to weak heart action which stimulates acid.

Most of the patients became slightly more acid with Diamox treatment, but the level of carbon dioxide in the blood did not change significantly. Drowsiness was the only side effect. The reason for improvement with Diamox is still undetermined, but the investigators report better results with the cor pulmonale group than with a previous group whose heart condition was associated with high blood pressure and valvular defects.

Furadantin in Pediatrics

Of 38 hospitalized children given

Furadantin in either liquid or tablet form, 11 of the 13 cases of urinary tract infections without anatomic abnormality were cured completely, S. Harris Johnson III, M.D., and Matthew Marshall, Jr., M.D., report in the *American Journal of Diseases of Children* [89:199 (1955)]. They consider this "a high proportion of good results, since all but one of these patients had either chronic or recurrent infection in spite of previous therapy with other drugs."

Of 11 cases with infection in the presence of obstruction, there was 1 complete cure and 5 cases showed marked improvement. Nine other patients were not under observation sufficiently long to evaluate the results.

The investigators found that after treatment with Furadantin, "the urine of over one-half of the patients with Proteus vulgaris infection was sterilized." They note that in this respect "nitrofurantoin has been more effective than any other drug we have used previously. We feel that this is especially important, since P. vulgaris infections occur rather commonly in infants and children." Furadantin also eradicated all four infections with Pseudomonas sp., which is often refractory to other drugs.

The researchers further note that "nitrofurantoin is relatively nontoxic. The liquid pediatric dosage form is palatable."

—Continued from page 99a

Achromycin Relieves Brucellosis Symptoms

Varying doses of Achromycin tetracycline relieved 13 patients with brucellosis of fever and other symptoms in eight to 15 days of therapy. Dr. F. Ruiz Sanchez and his colleagues at the University of Guadalajara, in Mexico, reported in *Antibiotic Medicine* [1:158 (1955)]. Only two patients suffered relapses—one after four months, the other after ten months—but both responded readily to retreatment with Achromycin.

Dosages as low as 12 mg. per kilogram of body weight daily were found as affective as the higher levels of 50 mg. daily, the investigators reported, but all the patients tolerated the antibiotic satisfactorily and no complications of any kind were observed. The patients ranged in age from eight to 58 and half were suffering from the acute form of brucellosis.

"Tetracycline maintains the therapeutic properties of chlortetracycline in the treatment of brucellosis," the doctors concluded.

Vitamin C Versus Infections

Evidence that vitamin C may help to combat infection is reviewed in *The Lancet* [1:443 (1955)]. This leading British medical journal notes that vita-

—Continued on page 102a

for "hot-weather pruritus"

EURAX® lotion

(crotamiton GEIGY)

The problem of summertime skin lesions is essentially one of intolerable itching.

EURAX provides an answer – immediate relief of itch in more than 90 per cent of patients.

sunburn · insect bites · heat rash · poison ivy

Moreover, the effect of a single application *lasts* for 6 to 10 hours or more, permitting uninterrupted sleep throughout the night.

Colorless, greaseless and nonstaining, EURAX is invisible following application – especially important when "summer pruritus" affects exposed parts of the body.

EURAX® (brand of crotamiton) Lotion is available in 2 oz. prescription bottles, and larger size dispensing bottles. Also available – EURAX Cream in tubes of 20 Gm. and 60 Gm., and 1 lb. dispensing jars.

GEIGY PHARMACEUTICALS
Division of Geigy Chemical Corporation, 220 Church Street,
New York 13, N.Y. *In Canada:* Geigy Pharmaceuticals, Montreal

MODERN THERAPEUTICS

—Continued from page 100a

min C breaks down many sugars known as polysaccharides in the presence of oxidizing agents. It is possible therefore that this action is involved in an attack on the polysaccharides in the walls of bacteria cells. The journal adds that ascorbic acid together with oxidizing agents may promote resistance to infections and recovery from infections by attacking local accumulations of mucin.

Aerosol Therapy Aids Asthma and Emphysema

Continuous humidification with the "non-toxic, aerosol detergent Alevaire", combined with cold, moist air, "is most effective therapeutically" in treating such respiratory disorders as asthma and emphysema, according to a report in the *Amer. J. of Surgery* [89:337 (1955)].

Drs. Maurice S. Segal and Ernst Attinger suggest that Alevaire "acts as a cleansing agent" by helping to lower the surface tension of adherent mucopurulent secretions. This condition, they add, is especially troublesome in bronchitis in small children and adults. Regarding administration, they say the aerosol should be introduced into enclosed oxygen tent units and may be continuous for one or more days, or intermittent, as needed.

"We have not observed any toxic

effects from Alevaire therapy," the authors say. They recommend 100 per cent concentrations of Alevaire with alternating cold water vapor therapy, 500 cc. of each.

Respiratory infections may be caused by actual changes in the physiology of the respiratory tract. A predisposing physiological change, the doctors suggest, is hot, dry air in homes and offices that "tends to dry long tissues to some extent," paving the way for infection. There is a serious problem in managing such infections, particularly recurring bronchitis in asthmatic children and, to a lesser extent, in adults with sinobronchitic disease, asthma and emphysema.

Therapy of Urinary Tract Infections

Of 50 cases of urologic infections at the General Hospital Barmbeck, Hamburg, Germany, 36 were cured and 3 cases improved under treatment with Furadantin, K. H. Schmidt, M.D., reports in *Munchener medizinische Wochenschrift* [96:1516 (1954)]. He notes that 13 of 42 patients with chronic, complicated, drug-resistant infections, were cured rapidly, as confirmed bacteriologically by 3 consecutive sterile urine cultures in each case.

Clinical cures were obtained in an additional 10 of these patients and improvement in 3. There were 3 acute in-

—Continued on following page

MODERN THERAPEUTICS

—Continued from page 103a

fections, all with *E. coli*, which responded rapidly, with sterile urine in all within a short time.

In summarizing the results, Dr. Schmidt states in translation: "Economically more advantageous than the wide spectrum antibiotics . . . Furadantin, through its wide spectrum of action and its good tolerance and freedom from toxicity, should be preferred in the therapy of urinary tract infections, especially where therapy-resistant cases are treated."

Hay Fever Symptoms Relieved By Antihistamine Drug

Following an elaborate series of tests in more than two thousand patients, G. A. Cronk and D. E. Naumann of Syracuse University have reported that the antihistamine drug Bristamin provided relief from hay fever symptoms for 90 per cent of a group of victims.

—Continued on page 109a

MEDICAL TEASERS

Solution to puzzle on page 41a

Corrigendum: June issue page 43a should have read "Contributed by Clell Hartley, M.D."

She'll enjoy this pregnancy

Fifty per cent of all pregnant women—even those on a "good" prenatal diet—suffer calcium deficiency symptoms.*

the wrong calcium worse than none

New evidence further shows that because of calcium-protein antagonism, time-honored calcium phosphate supplements may actually cause a deficiency, just when optimum levels are desired. And high-protein diets are also rich in calcium-draining phosphorus. Thus leg cramps are a minor symptom of major significance: their presence may indicate seriously low calcium levels.

reduce phosphate . . . increase calcium

Calcisalin, a complete prenatal supplement, containing 100% of the MDR for vitamins and iron, is also completely physiologic. Phosphate-free and phosphorus-eliminating, it helps prevent hypocalcemia at both points of origin: • calcium lactate assures readily assimilable calcium, free from the depressing action of phosphorus • aluminum hydroxide gel takes up excess dietary phosphorus without interfering with the value of other nutrients.

Note: "Noncomplainers"; many patients consider leg cramps "normal" and complain only when cramps are severe. Thus the number of complaints does not truly reflect the higher incidence of calcium depletion. To safeguard against serious, "silent" calcium depletion, all women who enjoy a high-protein prenatal diet can benefit from Calcisalin's phosphate-free, phosphorus-eliminating properties.

Dosage: Two tablets three times daily.

Available: Bottles of 100 tablets and in 8-ounce nursing bottles containing 300 tablets.

Amer. J. O. Obstet.
& G., 105:6, August 1969

Calcisalin®

WARNER-CHILCOTT

in vaginitis 94% effective

MILIBIS®

VAGINAL SUPPOSITORIES . . . The effectiveness of Milibis Vaginal Suppositories has been uniformly high in cases of vaginitis due to trichomonal, monilial, or mixed bacterial (nongonococcus) pathogens. A recent clinical study of 510 cases of vaginitis (including 169 cases of trichomoniasis) treated with Milibis showed a 94 per cent favorable response as demonstrated by disappearance of vaginal discharge and return of normal vaginal flora.[1]

THERAPEUTIC REGIMEN WITH MILIBIS VAGINAL SUPPOSITORIES

"Simple . . . no esthetic discomfort to the patient . . . rare and inconsequential side effects." (Shanaphy)[1]

A Milibis suppository should be inserted in the vagina on alternate nights for a series of from 5 to 10 administrations. Acid douches (1 tablespoonful of vinegar and 2 teaspoonfuls of pHisoHex* in each quart of warm water) may be used in conjunction with Milibis therapy. Reich[2] and his associates recommend acid douches followed by insertion of a Milibis suppository nightly for 5 consecutive administrations, and thereafter office treatment twice weekly throughout the month, including the menstrual period.

In particularly refractory cases, the course of treatment may be expanded, or dosage increased to 1 suppository twice daily for two weeks.

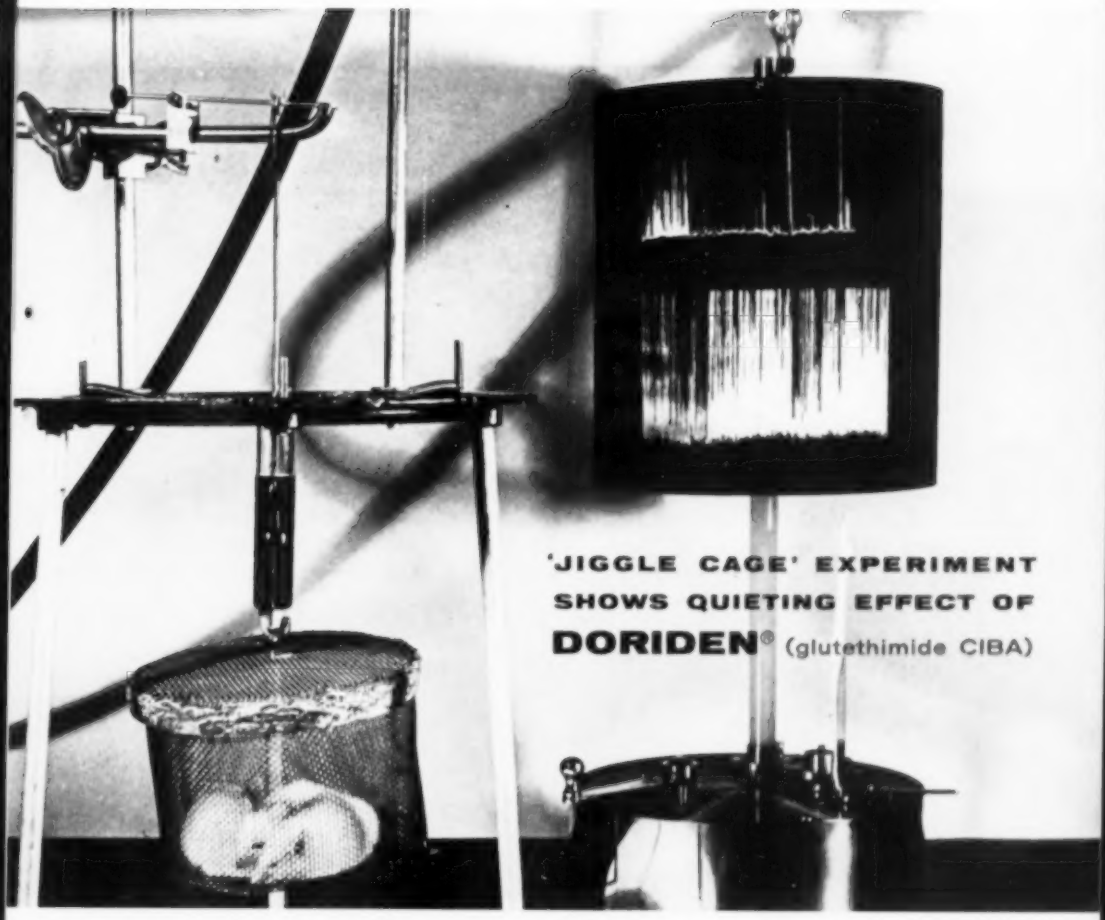
In all types of vaginitis, the patient should be examined after each menstrual period for several successive months, even when the infection has disappeared.

MILIBIS Vaginal Suppositories are supplied in boxes of 10, each suppository containing 0.25 Gm. Milibis in a gelatin-glycerine base.

1. Shanaphy, J. F.: *New York Jour. Med.*, in press.
2. Reich, W. J.; Rubenstein, M. W.; and Reich, J. B.: *Maryland Med. Jour.*, 2:241, May, 1953.

*pHisoHex®—an antiseptic, emollient, soapless cleanser—should be mixed with ¼ cup of hot water before adding to douche solution.

WINTHROP Winthrop-Stearns INC. New York 18, N. Y.—Windsor, Ont.

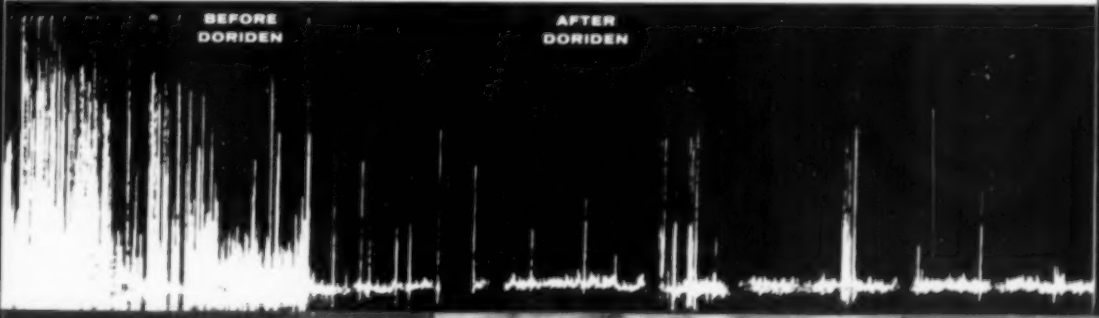


'JIGGLE CAGE' EXPERIMENT SHOWS QUIETING EFFECT OF DORIDEN® (glutethimide CIBA)

That **DORIDEN**—a totally new nonbarbiturate hypnotic and sedative—is effective as a quieting agent is demonstrated by this pneumatic movement recorder (jiggle cage), which measures the activity of laboratory animals. Note the marked change in the activity of mice after the administration of DORIDEN. Further evidence of the sedative and hypnotic effectiveness of DORIDEN is provided by numerous clinical studies. DORIDEN acts in 15 to 30 minutes and affords 4 to 8 hours of sound refreshing sleep. Present clinical evidence indicates it is not habit forming.

Tablets (white, scored), 0.25 and 0.5 Gm.

C I B A SUMMIT, N. J.



Composite X-ray visualization of the sustained

MODERN THERAPEUTICS

—Continued from page 194

As reported in the current issue of the *New York State Journal of Medicine* [55:1465 (1955)], the investigation was undertaken to determine the clinical applications, proper dosage and possible toxic effects of the antihistamine.

The antihistamine was used alone in the treatment of thirty-three patients suffering from seasonal allergic rhinitis. At the proper dosage level, it was found to secure relief from symptoms of allergic rhinitis for 90 per cent of the group. There were no toxic reactions, although mild drowsiness was observed by three patients out of 2,330.

In six other groups, the antihistamine was used in conjunction with various other drugs. The report states that in a series of patients with non-specific upper respiratory infections there were no demonstrable benefits from medication with the antihistamine or oral penicillin.

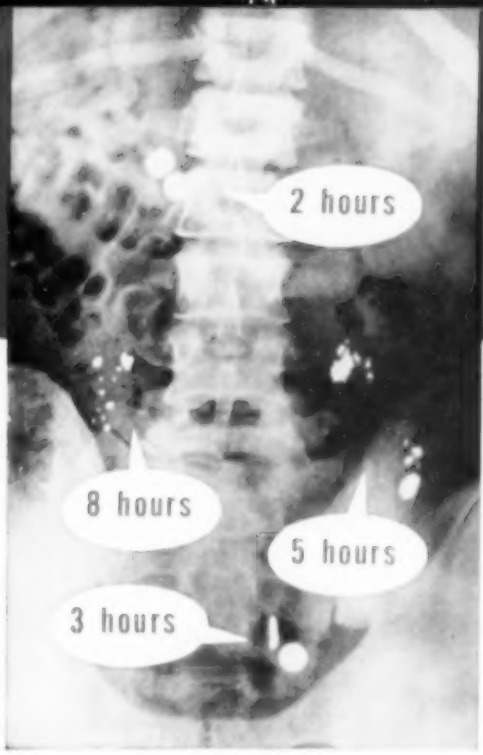
A further test, in which it was planned to determine the antihistamine's protective value against penicillin reactions, was statistically inconclusive, due to the paucity of reactions following oral penicillin therapy.

Chlorpromazine

Chlorpromazine, a drug developed in France, has been shown to intensify and prolong the action of drugs such as hypnotics, anesthetics and narcotics, and to aid in controlling drug-induced and disease-induced nausea and vomiting. It has proved efficacious in the

—Continued on page 172

Composite X-ray visualization of the sustained release of Dura-Tab S.M. (Individual X-rays on file.)



NEW

Sustained medication with a predictable release rate

DURA-TAB S.M.*

SUSTAINED MEDICATION TABLETS†

The Wynn S.M. process is distinctive in that it provides an even, continuing release of medication over a period of 8 to 10 hours, with therapeutic effectiveness to 12 hours. The action of the medication is maintained at the optimum therapeutic level. Clinical tests over the last 2 years have proved the value of this new type of therapy.

Dura-Tab S.M. Tablets do not have a series of enteric coatings, nor are they coated granules. This new process assures a constant, predictable release of the medication, with no "up-and-down" effects.

Samples and literature on request

Dura-Tab S.M. Tablets are supplied in a number of formulas:

Homatal
Homatropine methylbromide ¼gr.
Phenobarbital 1 gr.

Dexatal No. 1
d-Amphetamine Sulfate 15 mg.
Phenobarbital ¼ gr.

Dexatal No. 2
d-Amphetamine Sulfate 10 mg.
Phenobarbital ½ gr.

Dextro-Amphetamine Sulfate
in 15 mg. and 10 mg. Dura-Tab S.M. Tablets

Wynn Pharmacal Corporation

5111-25 West Stiles Street, Philadelphia 31, Pa.

*T.M. Reg. †Pat. applied for

Today's foremost antibiotic!

ACHROMY

—true broad-spectrum activity

—rapid diffusion and penetration

—prompt control of infection

—negligible side effects

—effective against Gram-positive and Gram-negative bacteria, rickettsia, spirochetes, certain viruses and protozoa

—produced under rigid quality control in Lederle's *own* laboratories

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CIN

TETRACYCLINE *Lederle*

DOSAGE FORMS FOR EVERY NEED . . . A CHOICE OF POTENCIES!

New!

ACHROMYCIN Sf

ACHROMYCIN WITH STRESS FORMULA VITAMINS

—a Lederle exclusive! No oil, no paste, tamper-proof. More rapidly and completely absorbed. Stress vitamin formula as suggested by the National Research Council. Prescribe ACHROMYCIN SF for prompt control of infection and rapid patient recovery, particularly in prolonged illness. *Capsules of 250 mg.*

Also available: ACHROMYCIN SF Oral Suspension: 125 mg. per teaspoonful (5 cc.), 2 oz. bottle.

Lederle

LEDERLE LABORATORIES DIVISION *American Cyanamid Company* Pearl River, New York

—Continued from page 108a

management of the psychomotor excitement accompanying states of anxiety, confusion, mania, obsessions and phobias. In this connection, Robert Wallis, writing in the *New York State Journal of Medicine* [55:243 (1955)], described the usefulness of chlorpromazine in potentiating drugs used for conditions commonly met in office practice. His observations were made on three groups of patients, i.e., those unable to sleep in spite of appropriate medication, those with acute and chronic pain who were unrelieved by usual analgesic agents, and tense and anxious patients with psychosomatic complaints. In the first group, patients received marked benefit when 25 to 50 mg. of chlorpromazine, given orally, were added to the sedative. Also, smaller amounts of the sedative users of alcohol. In patients suffering from the pain of advanced cancer, neuralgia, sciatica, and neuritis of the brachial plexus, the analgesic-chlorpromazine combination proved very effective. Patients with psychosomatic complaints were only moderately benefited when given chlorpromazine alone but in combination with phenobarbital, Trasentine, Belladenal or Phenaphen the effects were remarkable.

Rheumatic Diseases Treated with Phenylbutazone

Phenylbutazone (Butazolidin) is one of the newer antirheumatic drugs which

—Continued on page 114a

NOW *happy travelers chew*

Bonamine*
HCl

Brand of meclizine hydrochloride

chewing tablets

Probably 30 to 50% of all travelers experience some degree of pleasure-spoiling malaise, anorexia, nausea, and vertigo. For these motion-sensitive vacationers, you can prescribe new BONAMINE CHEWING TABLETS to insure happier travel, no matter what the method of transportation.

For the convalescent or the invalid traveling for his health, BONAMINE helps to avoid the strain imposed by vertigo, nausea and vomiting. Also indicated for control of nausea, vomiting and vertigo associated with labyrinthine and vestibular disturbances, Menière's syndrome and radiation therapy.

BONAMINE rarely causes drowsiness or other unwanted reactions.

Supplied on prescription only:

CHEWING TABLETS (New) — 25 mg., candy-coated, mint-flavored. Packages of 8.

TABLETS — 25 mg., scored and tasteless. Boxes of 8 and bottles of 100 and 500.

*

Pfizer PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.

—Continued from page 112a

has been clinically shown to create an antipyretic, analgesic, and anti-inflammatory effect. The authors, Harris and Klein *New York State Journal of Medicine*, [55:95 (1955)] selected 150 patients from an arthritis clinic, divided them into four groups and administered Butazolidin over periods of 3, 6, 12 and 18 months respectively.

Blood platelet counts were made before, during and at the termination of treatment. The patients were watched carefully for evidence of side-effects. In all groups, only three patients (all in three-month group) exhibited toxic manifestations necessitating discontinuance of the drug. In general, there was no significant change in the blood picture. With one exception, the blood platelet count was over 130,000 at the end of the treatment. In nearly all instances, the patients obtained rapid and prolonged relief of pain.

Treatment of Leukorrhea Infections

"Excellent" results obtained in the treatment of leukorrhea with Milibis vaginal suppositories are described by Dr. Joseph F. Shanaphy, N. Y. University College of Medicine, in the *N. Y. S. Journal of Medicine* [55:1335 (1955)].

Milibis suppositories were used by 510 patients with symptomatic leukorrhea caused by trichomonad, monilial or mixed and bacterial infection. Total dose per patient was five suppositories in a period of ten days. Of 169 cases of trichomoniasis, 77.5 per cent were "completely relieved by one course of therapy, while only 11 patients, 6.5 per cent, failed to improve." An additional 16 per cent were improved by the first

course, many were completely relieved at the end of the second series of treatments.

In the group of 132 cases with monilial infection, many of whom were pregnant, 75 per cent experienced complete relief of symptoms, and 21 per cent moderate relief, following the first course of treatment. The tests also showed 73 per cent of the 159 cases of mixed and bacterial infection to be asymptomatic, and 20 per cent moderately abated, after the first course.

Side effects were "extremely rare" among 88 per cent of the 510 patients who were given follow-up examinations. Dr. Shanaphy reports that ten patients experienced burning and itching sensations, which completely disappeared without the use of any medication 24 hours after therapy was discontinued.

The "uniformity of good results" in treating leukorrhea with Milibis suppositories, he concludes, "makes extensive and uncertain laboratory work of lesser importance in the management of this frequent complaint."

The physicians noted that nausea and vomiting occur to some extent in about 75 per cent of all pregnancies, and in some cases may be a serious and dangerous complication.

Treatment with Bonadoxin was considered on the basis of meclizine's proven long-acting activity as an antimotion sickness compound. Pyridoxine is believed to increase the effect of meclizine in the control of vomiting.

Bonadoxin contains 25 mg. of meclizine and 50 mg. of pyridoxine in each tablet. Distributed by J. B. Roerig and Co., available by prescription only.

Drs. Weinberg and Werner conclude that Bonadoxin "has a prolonged salutary effect on the great majority of cases of nausea and vomiting of pregnancy."

—Concluded on following page

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Control of Morning Sickness In Pregnant Women

A combination of the antihistamine meclizine and pyridoxine hydrochloride, Bonadoxin, effectively controlled vomiting of pregnancy in 88 of 100 patients treated by Drs. Arthur Weinberg and William E. F. Werner.

The physicians, of the Rockaway Beach Hospital and New York Medical College department of obstetrics and gynecology, report their findings in a recent issue of the *American Practitioner and Digest of Treatment* [6:580 (1955)].

In 30 of the patients, one tablet of Bonadoxin every 12 hours completely eliminated both nausea and vomiting usually associated with "morning sickness" of pregnancy, Drs. Weinberg and Werner found.

The antihistamine-vitamin combination also eliminated vomiting in another 58 patients. Only 12 women failed to respond to this therapy, according to the clinical investigators.

They found that on the whole, tolerance to Bonadoxin was excellent, with no resulting drowsiness apparent. Also absent were symptoms of drug sensitivity.

Cyanocobalamin Intravenously Administered

Intramuscular injections of vitamin B_{12} are generally accepted as being effective therapeutically in a number of disease states. Administration is not followed by side reactions. According to Goldblatt in a report in the *American Journal of Clinical Nutrition* [3:129 (1955)], the intravenous administration of cyanocobalamin has been infrequently utilized, but is safe and offers certain advantages over intramuscular injections. In the former type of injection, the rate and amount of absorption of the vitamin need not be considered.

Cyanobacolamin and a 1.5 per cent solution of benzyl alcohol were administered intravenously to 150 patients suffering from various disorders; the number of injections per patient ranged from eight to 796, and the daily amount from 15 to 3000 micrograms. Of a total of 3297 intravenous injections no allergenic or toxic effects were noted. Vitamin B_{12}, it would appear, may be safely injected intravenously either with or without a bacteriostatic preservative.

in gestation

. . . nowhere will you find so much protection by such small guardians

two-a-day

GESTATABS

. . . the Mol-Iron® prenatal supplement . . . provide

- ✻ **Protection** from iron deficiency anemia with prophylactic Mol-Iron
- ✻ **Protection** from leg cramps during pregnancy with phosphorus-free calcium
- ✻ **Protection** from neonatal prothrombin deficiency with vitamin K.

The comprehensive formula of Gestatabs satisfies the nutritional demands of pregnancy—thus reducing complications, aiding delivery and improving lactation.

Vitamin A	6,000 U.S.P. Units
Vitamin D	600 U.S.P. Units
Vitamin K (Menadione)	2 mg.
Vitamin B_{12} Activity Equivalent*	2 mcg.
Folic Acid	1 mg.
Ascorbic Acid	100 mg.
Thiamine Mononitrate	3 mg.
Riboflavin	5 mg.
Pyridoxine Hydrochloride	1.5 mg.
Calcium Pantothenate	10 mg.
Nicotinamide	30 mg.
Mol-Iron	
Ferrous Sulfate	120 mg.
Molybdenum Oxide	1.8 mg.
Calcium (Elemental)**	380 mg.

*As in Streptomyces fermentation extractives.

**Phosphorus-free from calcium gluconate and calcium carbonate.

—supplied in bottles of 60 (one month's supply) and 1000 tablets.

Also, Mol-Iron with Calcium and Vitamin D, capsule-shaped tablets—for treatment of anemia of pregnancy.

WHITE LABORATORIES, INC.
Kenilworth, N. J.

NEWS AND NOTES

New Suction Method Aids Post-Operative Healing

A new mechanical suction method of draining wounds after some types of major surgery has been developed to replace heavy pressure dressings now in common use.

This means that draining can be completed within 48 hours without the troublesome accumulations of fluid in such wounds which often prevent them from healing quickly.

Dr. John E. Connolly, San Francisco, described successful results of the new method among 40 patients, in a recent issue of the *Journal of the American Medical Association*.

After surgery, a tube is inserted into the wound, and the protruding end attached to an electric suction pump which removes accumulating fluid.

The suction method means a shorter post-operative hospital stay for patients, and avoids complications which result from usual methods of letting the incision drain under a heavy pressure dressing.

Why Injections Hurt

Practically everyone at some time or another has had an injection and practically everyone knows it hurts sometimes. A New York City physician explained just why—and what can be done about it.

It's not just the jab of the needle as it punctures the skin that causes the trouble, according to Dr. Janet Travel, of Cornell University Medical College. Her report on injection pain appeared in a recent issue of the *Journal of the American Medical Association*.

There are three reasons why the injection hurts, she said. One is mechanical—the needling, or sudden distention of tissues from rapid injection of fluid. The others are irritation—due either to antiseptic on the skin or to the injected fluid itself, and abnormal sensitivity of the skin or the muscle.

She strongly disagreed with the notion "that some pain is to be expected from the mere jab of the hypodermic needle," and said "given a non-irritant solution" injections can be made painless.

She said the best way to eliminate skin pain is by cold. Years ago an ice

—Continued on page 122a

Better Patient Cooperation

Because of

Simpler, More Effective Combination Therapy

in hypertension

The combination of Rauwiloid with more potent hypotensive agents, such as Veriloid and hexamethonium, each in single tablet form, simplifies and makes more effective the treatment of advanced, severe forms of hypertension.

SIMPLER . . . because the physician need prescribe only one medication and the patient need not cope with complicated dosage schedules. The flat dose-response curve of the contained Rauwiloid permits dosage to be governed solely by the response to the more potent hypotensive agent in the combination.

MORE EFFECTIVE . . . because of the synergistic influence of Rauwiloid on the potent hypotensive agents, thus permitting greater efficacy from smaller dosage. Side actions of these potent hypotensive drugs are notably reduced. These combinations are virtually free from allergic toxicity.

RAUWILOID® + VERILOID®

A Riker Single-tablet Preparation

Indicated in moderately severe hypertension. Each tablet contains 1 mg. Rauwiloid and 3 mg. Veriloid.

Initial dosage, one tablet t.i.d., p.c. In bottles of 100 tablets.

RAUWILOID® + HEXAMETHONIUM

A Riker Single-tablet Preparation

Indicated in rapidly progressing, otherwise intractable hypertension. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate.

Initial dosage, one-half tablet q.i.d. Available in bottles of 100 tablets.

Riker LABORATORIES, INC., LOS ANGELES, CALIF.

—Continued from page 120a

cube helped; now sprays of powerful cooling agents that do not themselves irritate can be used. Muscle pain can be avoided by testing for and avoiding "trigger areas" that are especially sensitive, or by using a local anesthetic in the injected fluid. This may also help relieve pain from irritant solutions.

On questioning a professional audience, she said she found only one in a hundred had never had an injection, and only about ten per cent said they did not dread the next one. With the technique she described, she said "pain of injection is not inevitable."

Consultant Refutes Idea About Cancer

The theory that vegetarians are less likely to get cancer than meat eaters just can't be proved, a physician said.

Writing in answer to a query in a recent issue of the *Journal of the American Medical Association*, the consultant said there is no important evidence to back up the theory.

There are two exceptions to the general rule that vegetarians and meat eaters are equally susceptible, the consultant said. Women who have a disease called Plummer-Vinson syndrome, which apparently results largely from lack of iron and vitamin B, tend to have more cancers of the mouth, pharynx, and esophagus. This deficiency is due mostly to the unavailability of green vegetables most of the year.

The other exception is the high incidence of cancer of the liver among the African Bantus, who eat virtually no meat.

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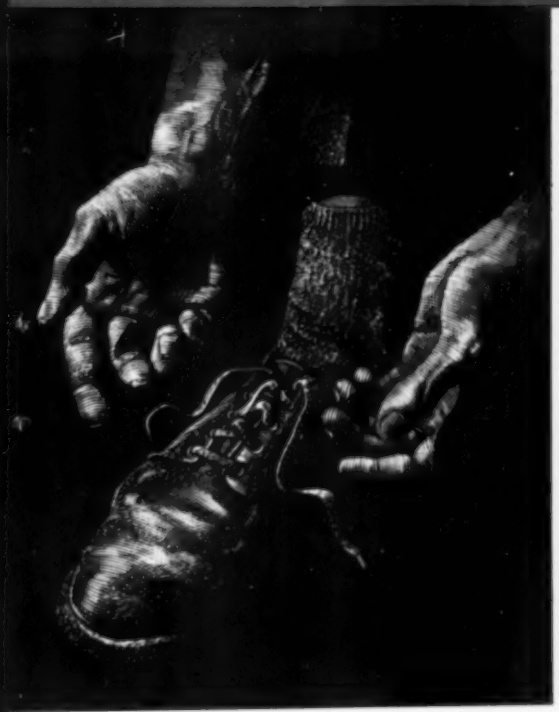

from futility to utility... in rheumatoid disorders

Acetycol provides welcome relief to the patient suffering from the stiffness and pain of arthritis and related rheumatoid disorders. With Acetycol therapy his range of pain-free mobility is broadened and his entire outlook brightens. He is able again to resume more normal activities in work and play.

The effectiveness of Acetycol is based on synergism between aspirin and para-aminobenzoic acid. These two agents in combination achieve high salicylate blood levels on relatively low dosage. The addition of salicylated colchicine extends the effectiveness of Acetycol to cases of a gouty nature.

Acetycol also contains three important vitamins often lacking in older and rheumatic patients: these are ascorbic acid, to prevent degenerative changes in connective tissues; thiamine and niacin, for carbohydrate utilization and relief of joint pain and edema.

Usual dosage – 1 or 2 tablets three or four times a day.

Each Acetycol tablet contains:

Aspirin	325.0 mg.
Para-aminobenzoic acid	162.0 mg.
Colchicine, salicylated	0.25 mg.
Ascorbic acid	20.0 mg.
Thiamine hydrochloride	5.0 mg.
Niacin	15.0 mg.

Supplied: Bottles of 100 and 500.

Acetycol

TRADEMARK

to relieve rheumatic pain

WARNER-CHILCOTT

for seborrheic dermatitis patients

SELSUN®

. . . *brings quick, sure relief*

Just two or three SELSUN applications relieve itching, burning scalps. Four or five more completely clear scaling. Then each SELSUN application keeps the scalp free of scales *for one to four weeks.* And SELSUN completely controls 81-87% of all seborrheic dermatitis cases, 92-95% of dandruff cases.

. . . *with no daily care or ointments*

Your patients will find SELSUN remarkably easy to use. It is applied and rinsed out while washing the hair. Takes only about five minutes – no messy ointments or overnight applications. Leaves both hair and scalp clean. In 4-fluid-ounce bottles, on prescription only. Abbott

®SELSUN *Sulfide Suspension / Selenium Sulfide, Abbott*

—Continued from page 122a

The consultant said there is some evidence that the quantity of calories eaten appears to make more difference than the kinds of foods.

Physician Licensing Reaches New High

The number of new physicians added to the nation's physician population reached a record high in 1954, according to figures released by the American Medical Association Council on Medical Education and Hospitals.

Boards authorized to license physicians to practice gave 15,029 licenses during the year, an increase of 595 over the previous year.

The report said that deducting the 3,667 physician deaths in 1954, there remained 4,250 new physicians in practice since the beginning of the year. This was 641 more physicians than were added to the population in 1953.

The council's report appeared in a recent issue of the *Journal of the A.M.A.* It said that the physician population increase occurred in 31 states. The licenses issued brought to 222,773 the total of licenses granted since 1935.

Registration of physicians (including persons licensed in 1954 who took exams in previous years) reached a level exceeded only by that of 1946, the all-time record year.

The report also showed that failures of candidates to pass license exams remained low. Only 4.2 per cent of the 5,999 American medical school graduates taking exams last year failed to get

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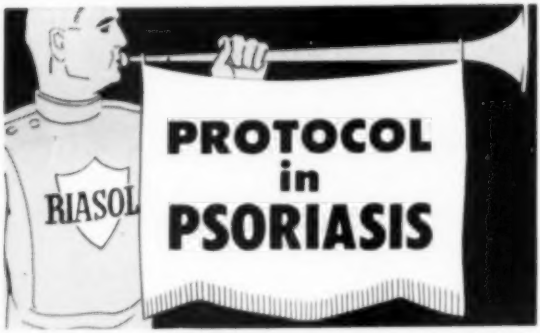


In a recent article in the *British Medical Journal*, Ingram* emphasized three important points: (1) The disease is milder in summer. (2) Psoriasis is essentially an epidermal reaction and hence should receive local therapy. (3) Treatment must be continued until the skin is clear; not a single active lesion can be left if extension is to be avoided.

These lessons apply to RIASOL, the effective local treatment for psoriasis:

(1) Attack psoriasis in the summer, when treatment proves most effective.

(2) Prescribe RIASOL, which improved the skin patches in 76% of a series of cases in which other treatments had failed.

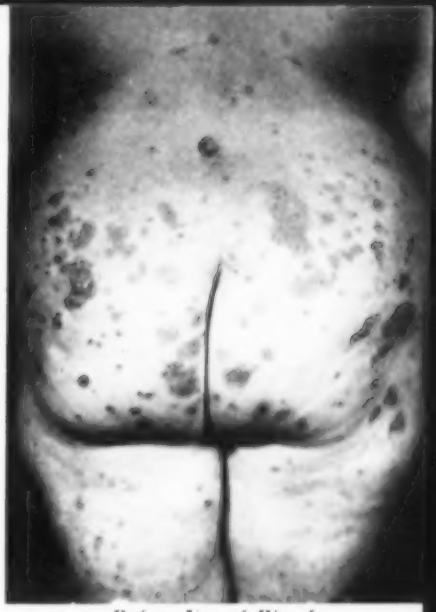
(3) Continue the use of RIASOL until every patch of psoriasis has disappeared, and in fact for several weeks afterwards.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

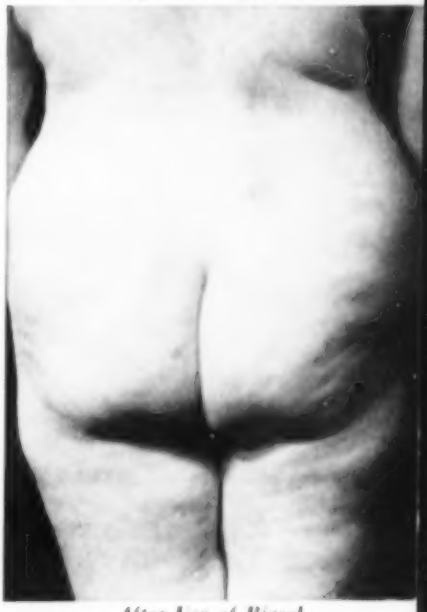
Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

*Ingram, J. T., Approach to Psoriasis, *British Medical Journal*, 2:591, 1953.



Before Use of Riasol



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Please send me professional literature and generous clinical package of RIASOL.

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RIASOL for PSORIASIS

When your geriatric, dyspeptic, underweight, or gallbladder patient doesn't respond to diet, the cause is frequently an inability to *utilize food*.

CONVERTIN furnishes the dietary catalysts necessary for efficient absorption in these individuals.

The specially layered construction of CONVERTIN provides selective release of ingredients to assure efficient absorption in the stomach and small intestine.

Each CONVERTIN Tablet provides:
a sugar-coated outer layer of:
Betaine Hydrochloride..... 130.0 mg.
(Provides 5 minims Diluted Hydrochloric Acid U.S.P.)
Oleoresin Ginger..... 1/600 gr.
Surrounding an enteric-coated core of:
Pancreatin..... 62.5 mg.
(Equiv. 250 mg. U.S.P.)
Desoxycholic Acid..... 50.0 mg.

DOSAGE: One or two tablets with or just after meals.

SUPPLIED: In bottles of 84 and 500 tablets.

B. F. ASCHER & COMPANY, INC.
Ethical Medicinals
KANSAS CITY, MISSOURI

the stomach and small intestine.

KANSAS CITY, MISSOURI

NEWS AND NOTES

—Continued from page 126a

licenses, and 43 per cent of the 126 Canadians failed. The largest part of the failures occurred among graduates of foreign faculties, schools not approved by the council, and schools of osteopathy.

The 15,029 licenses granted included a number given on the basis of interstate reciprocity and other qualifications. Licenses by examination actually were given to 6,827 persons. These candidates came from 73 medical schools in this country and 11 in Canada. The rest were from foreign schools, unapproved schools, and schools of osteopathy.

The largest number of new license holders came from California, which licensed 1,975 physicians. Next was New York with 1,493, followed by Illinois, Ohio, Pennsylvania, and Texas with over 500 each; Delaware, Idaho, Nevada, North and South Dakota, and Vermont with less than 50 each.

The largest number of licenses granted to graduates of one school was the 207 given to graduates of the University of Illinois College of Medicine. Largest number of private school graduates licensed was 175 from Tulane University. Twenty-six schools had more than 100 licensees. Thirteen schools turned out candidate groups without a single failure in board examinations.

These were Stanford University, Georgetown University, Chicago Medical School, State University of Iowa, Wayne University, Albany Medical College, and the Universities of Buffalo, Rochester, North Carolina, Utah, Washington, Southern California, and Colo-

—Concluded on page 134a

PATIENTS WITH
A WEIGHT PROBLEM

WILL WELCOME
YOUR SUGGESTION

Only Half the Calories— but ALL *the Protein, Minerals and B Vitamins of* MILK . . .

Recommend that overweight patients change to *new Instant* PET Nonfat Dry Milk—one of the most useful foods whenever a diet low in fat, moderately low in calories, but high in protein and calcium is indicated.

Instant PET Nonfat Dry Milk supplies equivalent amounts of all the essential protein, minerals and B vitamins of whole milk—only the fat is removed. Used as a beverage, its delicious *fresh milk flavor* is enjoyed by everyone who likes milk. Used in cooking, it enriches everyday foods with the most important nutritional values of milk.

And *Instant* PET Nonfat Dry Milk is easy-to prepare, easy-to-store, easy-to-find in food stores everywhere—and its low-cost (less than half the price of ordinary milk) is attractive to people everywhere.

Developed by Pet Milk Company makers of the original evaporated milk.

PET MILK COMPANY • ARCADE BUILDING • ST. LOUIS 1, MISSOURI

NEWS AND NOTES

—Concluded from page 130a

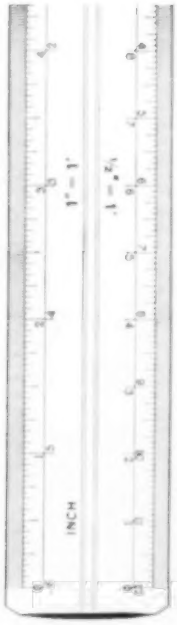
rado.

Foreign school graduates, including both American and foreign born persons, took 1,642 exams in 1954, with 943 of the candidates passing. The actual increase to physician population was 772, bringing the total of new foreign-trained physicians to 2,784 licensed in the past five years.

Illinois had a corner on the foreign graduate market, examining 435 and passing 216. New York was next with 413 exams and 134 successful candidates. Ohio and California followed in order.

The addition of physicians to the population on the basis of geographical areas was listed in the following order, beginning with the largest number:

Middle Atlantic States, 1,630 (New York, New Jersey, Pennsylvania); East North Central, 1,607 (Ohio, Indiana, Illinois, Michigan, Wisconsin); South Atlantic, 1,074 (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida); West North Central, 892 (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas); Pacific, 759 (Washington, Oregon, California); West South Central, 711 (Arkansas, Louisiana, Oklahoma, Texas); New England, 489 (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut); East South Central, 477 (Kentucky, Tennessee, Alabama, Mississippi); Mountain, 171 (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada); and the Territories and possessions, 57 (Canal Zone, Guam, Hawaii, and Puerto Rico).



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and by any measure it is just as true today as when our Company was founded . . . in the purchase of B-P RIB-BACK SURGICAL BLADES you are provided with the most dependable cutting edges that modern scientific methods and *the art of accuracy* can produce . . . their performance in use is the answer to the question of economy!

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It's Sharp

RIB-BACKS packaged in the *new* RACK-PACK eliminates unwrapping, handling or racking of individual blades. A real *time* and *labor* saver for the O.R. personnel. *In a matter of seconds* from RACK-PACK to sterilizer.

QUALITY AND DEPENDABILITY • UNIFORMLY SHARP • ENDURING CUTTING EDGES

"Mr. King, you're not cooperating."

new more comprehensive • more effective

RAUWOLFIA COMBINATION THERAPY of hypertension

and hypertensive symptoms

RAU-PERTENAL®

for faster, surer, safer control in the office patient than with any single drug

Each capsule-shaped, green **RAU-PERTENAL** tablet contains:

Rauwolfia Serpentina, standardized whole root	50 mg.
Veratrum Viride Ext., eq. to whole drug	75 mg.
Mannitol Hexanitrate	30 mg.
Homatropine Methylbromide	2.5 mg.

DOSE: 1 tablet 3 or 4 times a day, preferably after meals.

SUPPLY: Bottles of 50, 100 and 500 tablets.

A NEW HIGH IN SAFETY RAU-PERTENAL therapy is virtually worry-free, it will not produce any serious side-effect. Even veratrum nausea is reduced to a minimum because of minimum dosage.

A NEW COMPREHENSIVE EFFICACY Pressure is rapidly established and maintained at safer levels . . . distressing symptoms are promptly relieved . . . general tension is relaxed.

A NEW SMOOTHNESS OF RESPONSE Pressure is reduced gently, smoothly, without sudden, violent, frightening changes.

A NEW SENSE OF WELL-BEING is induced by RAU-PERTENAL. It has a marked mood-brightening effect—restores to patients a sense of well-being, comfort and normality.

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SYRACUSE—General practice 30 years. Modern residential home and air-conditioned office. Dr. deceased. Definite need for successor. Write Medical Times, Box 7F-1.

GENERAL PRACTICE—established, fully equipped office. Two excellent hospitals; nurse will stay; available immediately, due to death of doctor January 11, 1955. Mrs. Corwin S. Mayes, 508 Myers Building, Springfield, Illinois.

DOCTOR: Buy my equipment and modern residence, and I will introduce you. Practice established over thirty years. Good location in N. Central Texas. Retiring July 1st, 1955. Write Medical Times, Box 7F-4.

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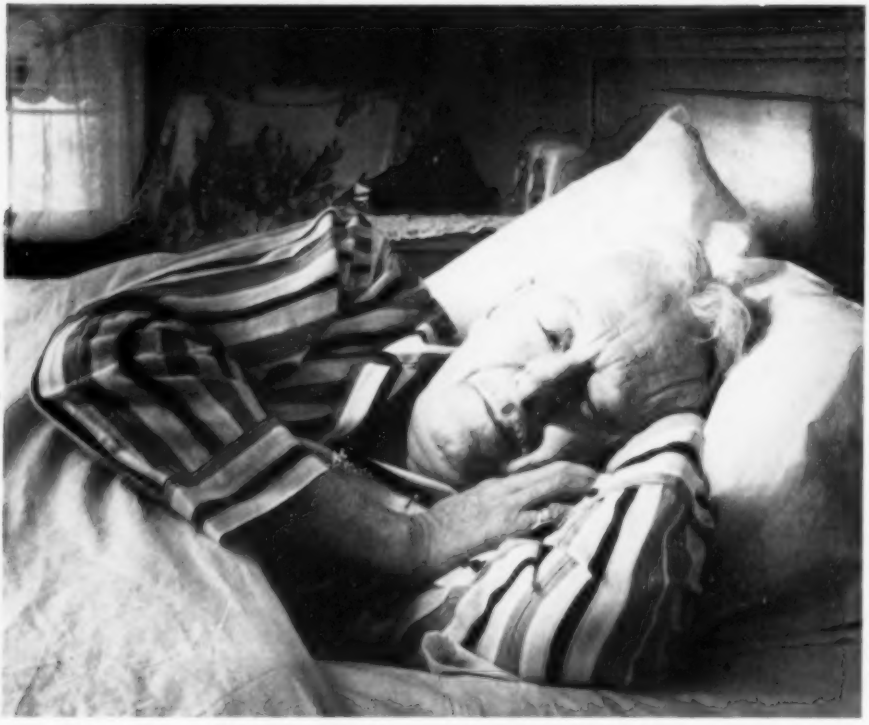

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References: 1. West Virginia M. J. 49:292, 1953. 2. Mod. Med. 19:59, 1951. 3. Geriatrics 9:303, 1954